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CATALOGUE OF REPTILES

INHABITING THE

MALAYAN PENINSULA AND ISLANDS,

COLLECTED OR OBSERVED

By THEODORE CANTOR, Esq., M. D.

BENGAL MEDICAL SERVICE.

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CATALOGUE OF REPTILES

INHABITING THE

MALAYAN PENINSULA AND ISLANDS,

ERRATA.

Page	8	line	16	for POTAMIDA read POTAMIDÆ.
,,	15	,,	23	for *biporcatus* read *porosus*.
,,	17	Note :		for *Geckotidæ* read *Geckonidæ*.
,,	37	line	3	for on the Pinang read in the Pinang.
,,	50	,,	5	for *Polycopodium* read *Polypodium*.
,,	74	,,	30	for HEXAHONOTUS read HEXAGONOTUS.
,,	80	,,	6	for *catenularies* read *catenularis*.
,,	82	,,	5	for Dryiphis read Dryiophis.
,,	152	,,	8	from below, for [This read The latter.
,,	152	,,	5	from below, for *crinitas* read *crinitus*.

Geoemyda spinosa, Gray.

Shell oblong, subquadrate, keeled, flattened above, chestnut coloured, front and hinder edge strongly serrated ; vertebral plates broad, first suburceolate ; costal plates with a posterior, subsuperior areola, with a slight subconic tubercle ; beneath yellow, brown rayed ; *young* depress-

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[Localities printed in Italics signify those from whence the animals of the Catalogue were obtained; in ordinary type those previously given by authors. The descriptions are in most cases taken from life; in the few in which it is expressly noted, shortly after death; in none from specimens preserved in spirits of wine.]

CHELONIA.

FAM. ELODIDÆ, OR MARSH-TORTOISES, *Dum. and Bibr.*

Sub-Fam. Cryptoderinæ, *Dum. and Bibr.*

Gen. Geoemyda, *Gray.*

Head covered with thin continued skin; chin not bearded. Legs strong, not fringed behind. Toes 5-4, strong, short, free, covered above by a series of shields; claws short. Tail tapering; shell depressed, three-keeled; hinder edge strongly toothed. Sternum solid, broad truncated before, notched behind; gular plate linear, band-like, small; axillary and inguinal plates small.

Geoemyda spinosa, (Bell.)

Syn.—Emys spinosa, Bell apud Dum. and Bibr.
Emys bispinosa, Schlegel.
Testudo emys, Müller?
Geoemyda spinosa, Gray.

Shell oblong, subquadrate, keeled, flattened above, chestnut coloured, front and hinder edge strongly serrated; vertebral plates broad, first suburceolate; costal plates with a posterior, subsuperior areola, with a slight subconic tubercle; beneath yellow, brown rayed; *young* depress-

ed, pale brown, bluntly keeled, with a distinct spine in the areola of each discal plate.

Habit.—*Pinang Hills.*

Sumatra.

Two individuals were observed by the Hon'ble Sir William Norris, late Recorder of H. M. Court of Judicature in the Straits of Malacca, on the Great Hill at Pinang, at a distance from water. The colour of the shell is a dirty brownish ochre, here and there with sooty rays, which numerously intersect the concave sternum. The keel, the marginal spines, and the costal tubercles are nearly obliterated, and the shell presents frequent marks of corrosion. The larger individual is of the following dimensions :—

Length of the head, ...	$1\frac{5}{8}$ inch.
Ditto ditto neck, ...	$1\frac{5}{8}$
Ditto ditto shell, ...	8
Ditto ditto tail,.....	$1\frac{2}{8}$

A large tick was firmly adhering to the throat of one of these tortoises, the presence of which however does not indicate an exclusively terrestrial life, as one species at least of the *Riciniæ* (*Ixodes ophiophilus, Müller?*) occurs on aquatic as well as terrestrial serpents. The following are the characters of *Ixodes geoemydæ*. The short sucker is depressed, slightly widening towards the bifid apex, and encased by the palpi. Above, and at a short distance from the latter, are two minute rounded fossæ. The cephalic, tetragonal plate is of a reddish brown colour, with a yellow spot at the posterior angle. The oval body is dark pearl-coloured. On each side close to the articulation of the posterior leg appears a small rounded horny plate. The legs are reddish brown with a yellow spot at each of the joints, except the last. Swollen, as the tick appeared, it measured six-eights of an inch in length ; half an inch in breadth.

Gen. Emys, *Brogniart.*

Head moderate, covered with a thin hard skin ; chin not bearded. Feet short, covered with scales ; toes 5-4, strong, shielded above, webbed to the claws. Tail moderate. Shell depressed. Sternum solid, broad, truncated before, notched behind, affixed to the thorax by a bony symphysis, covered by the ends of the pectoral and abdominal plates ; axillary and inguinal plates moderate, distinct.

A.—*Vertebral plates lozenge-shaped.*—Gray.

EMYS CRASSICOLLIS, Bell, MSS. apud Gray.

SYN.—Emys crassicollis, Bell, apud Dum. and Bibr.

Emys spengleri, Var, Schlegel.

Shell ovate, oblong, rather convex, revolute on the sides and deeply toothed behind, black, slightly three-keeled; keels close; first vertebral plate elongate, six-sided; sternum flat, pale, and keeled on the sides; head and neck thick, black.

HABIT.—*Malayan Peninsula, Pinang.*

Sumatra, Java.

In Malayan individuals, numerously inhabiting rivulets and ponds in the valleys, the throat is whitish, and a small white spot appears on each side of the occiput. The vertebral keels and the lateral spines become obliterated with age. The largest individual observed was of the following dimensions:—

Length of the head, ...	$1\frac{6}{8}$ inch.
Ditto ditto neck, ...	$1\frac{6}{8}$
Ditto ditto shell, ...	9
Ditto ditto tail,.....	$1\frac{1}{8}$

It feeds upon frogs and also upon shell-fish and animal offal. Old Malay women, who may be seen after every heavy fall of rain, spending hours, rod in hand, over the overflowing ditches, out of which their huts rise, are often ludicrously disappointed on perceiving this tortoise on the hook.

B.—*Vertebral plates broad, six-sided.* Gray.

EMYS PLATYNOTA,—Gray.

SYN.—"Kátong" of the Malays of the Peninsula.

Shell ovate, convex, yellow dotted, with the centre of the back quite flat, as if truncated; shields striated, nucleus central; vertebral shields broader than long, six-sided, 5th keeled; the front and hinder margin strongly toothed; sternum flat, truncated before; and slightly notched behind; tail moderate, tapering.

HABIT.—*Malayan Peninsula, Pinang.*

Sumatra.

Mr. Gray's description refers to the young animal, of which the length of the shell is given in *Proceed. Zoolog. Soc.* 1834. P. 54, as 9 inches. The representation of *Emys platynotha* in *Illust. Ind.*

Zool. from its size, and the strongly toothed flat front and hind margins of the shell, also appears to be a young animal. The penultimate, the fourth, vertebral shield is represented as divided in two pieces, which if so in the original, must be accidental, as normally the fourth vertebral shield is six-sided, and in size nearly equalling the preceding. The nuclei of the costal shields are more central than represented in the plate.

In the living adult animal the head, neck, shell, tail and feet are of a dirty yellowish, or greenish brown, which becomes paler on the sternum. The nuclei of the vertebral shields are slightly raised. The costal shields are depressed, their sides sloping towards the nuclei, thus forming as it were very shallow hexagonal basins. The front and hind margins are broadly revolute, their toothed appearance worn off. The sternum is slightly concave in the centre. The largest individual was of the following dimensions :

Length of the head,	. . . . .	0 feet	3	inch.
Ditto ditto neck,	. . . . .	0	3	
Ditto ditto shell,	. . . . .	1	$7\frac{4}{8}$	
Ditto ditto tail,	. . . . .	0	$2\frac{4}{8}$	

It lived in my garden at Pinang upwards of a twelvemonth, apparently without food, and it was never observed to enter a tank. The shell bears deep white marks of corrosion, in appearance like that observed in Testacea inhabiting stagnant water. The animal suffered itself to be touched with impunity, never offering to scratch or bite. This tortoise inhabits the valleys, but is apparently not numerous.

EMYS TRIVITTATA, Duméril and Bibron.

Shell smooth, entire, subcordiform, arched, yellowish green, and with three broad longitudinal black bands ; jaws toothed.

HABIT.—*Malayan Peninsula, Pinang.*

Bengal.

It inhabits rivers and ponds on the Malayan Peninsula, but appears not to be numerous. In the Malayan adult animal there is a large black spot situated at the anterior, lower angle of the marginal shields, there is no trace of a keel in the centre of the vertebral shields, and the very minute nuchal shield is triangular, with the apex towards the vertebral shields. The shield is rather oval than subcordiform. The sternum is slightly arched, of a pale whitish yellow. The largest individual was of the following dimensions :

Length of the head, ...	0 feet	3 inch.
Ditto ditto neck, ...	0	$2\frac{4}{8}$
Ditto ditto shell, ...	1	6
Ditto ditto tail, ...	0	$2\frac{3}{8}$

GEN. CISTUDO, *Fleming.*

Head moderate, covered with a thin hard continued skin, Toes 5-4, webbed to the claws, web thick, with a small intermediate lobe between the claws. Tail short. Shell convex, ovate, or hemispherical. Sternum broad, rounded before and behind, completely closing the cavity of the thorax, affixed to it by a ligamentous, symphysis, and divided by a cross suture between the pectoral and abdominal plates. Sternal shields twelve. Inguinal and axillary plates very small, but distinct. Marginal plates 23-27. Nuchal plate small or wanting.

CISTUDO AMBOINENSIS, (Daudin.)

SYN.—Testudo amboinensis, Daudin.
Emys amboinensis, and couro, Schweigger.
Tortue à boite d' Amboine, Bosc.
Terrapene amboinensis, Merrem.
Kinosternon amboinense, Bell.
Cistuda amboinensis, Gray.
Terrapene couro, Fitzinger.
Emys couro, apud Wagler.
Terrapene bicolor. Bell.
Emys couro, Var. Schlegel, apud Gray.
"Băning" of the Malays of the Peninsula.

HABIT.—*Malayan Peninsula, Singapore.*

Java, Amboina, Philippine Islands, Tenasserim provinces.

Shell hemispherical, slightly three-keeled, blackish, margin broad expanded, nuchal shield linear; sternum black and yellow-varied; animal blackish, varied with yellow, head dark with two broad yellow streaks on each side.

The dorsal keels become obsolete with age, and the margin of the shell, particularly the posterior part, becomes revolute. This species appears to be numerous in the valleys, in ponds, rivulets and paddy fields. It is very timid, withdrawing its head and limbs when handled, though it neither bites nor scratches. The largest individual observed was of the following dimensions.

Length of the head, ...	2	inch.
Ditto ditto neck, ...	$2\frac{1}{8}$	
Ditto ditto shell, ...	7	
Ditto ditto tail, ...	1	

GEN. TETRAONYX, *Lesson.*

Toes five; nails 4-4; sternum solid, broad with six pairs of shields; 25 marginal shields.

TETRAONYX AFFINIS, N. S.

Young. Shell orbicular, its breadth exceeding its length; the back sharply keeled longitudinally, slightly arched, laterally depressed; costal shields with a tubercular nucleus at the posterior margin; greyish green olive, minutely spotted with brown; edge sharply toothed, pale greenish yellow. Sternum truncated in front, angularly indented behind, narrow, yellow; laterally keeled, compressed, pale yellowish green.

HABIT.—*Sea off Pinang.*

The outline of the shell and its composing shields strikingly resemble the young of *Cyclemys orbiculata,* Bell.*

The nuchal shield (wanting in one individual,) is small, subrectangular or subtriangular, with the base directed backwards. The vertebral shields are strongly keeled, laterally sloping, hexagonal, broader than long, which however with the first is less the case than with the rest; the second, third and fourth are the broadest, and of nearly equal size; the fifth assumes a broadly truncated triangular shape. The costal shields are nearly all as broad as long; the first, second and third have each a tubercular nucleus in the centre of the posterior margin, the fourth is smooth, and a little smaller than the preceding. The first pair of marginal shields is truncated triangular, the second, and third subrectangular; the fourth sixth, and eighth pentagonal; the rest subrectangular. In all, the posterior external angle forms a more or less sharp spine, directed over the anterior external margin of the next shield. From the first to the sixth the shields gradually increase in size, the sixth being the largest and broadest, from which the following gradually decrease towards the twelfth pair, and their angular spines become obsolete. The sternum consists of two parts: one central, and two lateral, formed by the sterno-costal processes of the two central pairs, sharply sloping towards the marginal shields. The central part is longitudinally a little concave, narrowing towards both extremities, truncated in front, angularly in-

* SYN. *Emys dentata.* Illust. Ind. Zoolog.—*Emys dhor,* Gray.—*Emys hasseltii,* Boie.—*Emys spengleri,* Var. Schlegel.—*Cistudo diardii,* Dum. and Bibr.

dentated behind. The gular pair of shields is very short, broadly subtriangular with the posterior margin concave, curved backwards. The second, and fifth pairs are of nearly equal size, subquadrangular, their external margins forming a sharp ridge. The central part of the third and fourth pairs is subrectangular, broader than long, their margins forming a sharp ridge where they join the sterno-costal processes. The latter are of nearly equal size, longer than broad, their united length being less than one half of the central part of the sternum. The sixth pair is subrhomboidal, longer than broad. The axillary and inguinal pairs are large; the former subrhomboidal or lozeng-shaped, the latter subtriangular. The head is conic; the muzzle short pointed; the vertex irregularly wrinkled. On the temples, cheeks, and round the orbits, and the lower jaw appear some large polygonal scales. The occiput, angle of the mouth, and the rounded tympanum are covered with similar minute scales. The eyes are large, prominent; the iris silvery grey; the pupil round black. The nostrils are minute, round, horizontally pierced, close together at the apex of the muzzle. The jaws are minutely toothed; the upper has at the symphysis two larger teeth, between which fits a similar single one in the lower jaw, thus hermetically closing the mouth. The neck, the throat and the other soft parts are studded with minute tubercles, except the fore-arm, the posterior tarsal margin, and the back of the fingers and toes, which are covered with broad, but very short, polygonal scales. On the ulnar margin of the fore-arm are four to five large rounded flexible scales. The interdigital web is large and lax. The nails are strong, of nearly equal size, sharp, and arched. The conical tail reaches but little beyond the shell, with a longitudinal furrow behind the vent. The head, neck, throat and the limbs are of the same greyish green olive as the shell. The interdigital membrane is blackish, except the web connecting the fourth and fifth (nailless) toe, which is of a bright greenish yellow colour. Of three individuals observed, differing but little in size, the largest was of the following dimensions:

Length of the head, ...	$0\frac{6}{8}$ inch.
Ditto ditto neck, ...	$0\frac{3}{8}$
Ditto ditto shell, ...	$2\frac{4}{8}$
Ditto ditto tail, ...	$0\frac{4}{8}$
Greatest transverse diameter of the shell,	$2\frac{6}{8}$

Two were at different times found in fishing stakes placed along the sea-shore of Pinang; a third was also taken out of the sea with a small hook, baited with a shrimp. The Malays assert that this tortoise also inhabits estuaries and rivers on the Peninsula, and that it grows to a considerable size. The young is very timid, withdrawing the head and extremities when touched, and thus it remained immoveable while a sketch was taken.

From the description of the young of *Tetraonyx lessonii*, Dum. and Bibr. given in *Erpétologie Générale*, Tome 2, p. 338, and from the plates of *Emys batagur* and *Emys baska*, in *Illustr. Ind. Zool.*, from B. Hamilton's MSS., the present appears to differ in too many particulars, to warrant the conclusion of its being the young of those or that species.* The detailed description of the young will enable future observers, who may succeed in examining the adult, finally to decide the question.

FAM. POTAMIDA, OR RIVER-TORTOISES, *Dum. and Bibr.*

Gen. Gymnopus, *Dum. and Bibr.*

(*Trionyx*, Geoffroy.—*Aspidonectes*, Wagler.—*Tyrse, Dogania, Chitra*, Gray.)

Shell cartilaginous in its circumference, very broad, flexible behind, and externally not bony; sternum too narrow behind completely to cover the extremities, when the animal withdraws them under the shell.

Gymnopus gangeticus, (Cuvier.)

Syn.—Testudo ocellatus, (Young.) } Buchan. Ham. MSS.
Testudo hurum, }
Testudo chim, (Adult.) }
Trionyx gangeticus, Cuvier.
Trionyx hurum, Gray.
Trionyx hurum, Illust. Ind. Zool.
Trionyx ocellatus, Illust. Ind. Zool. (Young.)
Trionyx gangeticus, Var, Guerin. (Young.)
Gymnopus ocellatus, Dum. and Bibr. (Young.)
Gymnopus duvaucellii, Dum. and Bibr.
Tyrse gangetica, Gray: Catal.

Young.—(*Testudo ocellatus*, B. Ham. MSS.) Head above pale olive with one large yellow spot between the eyes and a similar behind

* M. M. Duméril and Bibron describe them as two distinct species; Mr. Gray is of opinion that they are identical.

each eye; neck, limbs and posterior margin of the shell dark olive with paler round spots; shell olive with black irregular lines, and 4 or 5 central ocelli, black in the centre, edged with red, round which a black ring; sternum pale whitish-olive.

Testudo hurum, B. Ham, MSS. is the transition state of the former, being about changing the livery. Head yellow olive, with irregular dark lines; shell light olive, vermiculated with blackish or dark olive. The four ocelli are present, but are altered in colours and shape: the centre, instead of being black, is like the rest of the surface, light olive, vermiculated with black; the red ring is changed to black, and the outer black one to light olive. The shape is changed from round to irregular oval.

Adult. (*Testudo chim*, B. Ham. MSS.) Dark olive-green, vermiculated, and spotted with light olive brown. Beneath greenish white.

Habit.—*Malayan Peninsula, Pinang* (*Rivers and Sea-coast.*)

Rivers and Bay of Bengal.

It is of fierce habits, desperately defending itself by biting, emitting when excited a low, hoarse, cackling sound. At Pinang the present species appears to be far less numerous than the two following. The largest individual was of the following dimensions:

Length of the head, ...	0 feet	4	inch.
Ditto ditto neck, ...	0	$4\frac{4}{8}$	
Ditto ditto shell, ...	1	11	
Ditto ditto tail, ...	0	5	

Gymnopus cartilaginea, (Boddaert.)

Syn.—*Young.*

Testudo cartilaginea, Boddaert.
Testudo boddaertii, Schneider.
Testudo rostrata, Thunberg?
Testudo rostrata, apud Schoepff, and Daudin?
Trionyx stellatus, Geoffroy.
Trionyx stellatus, apud Merrem.
Aspidonectes javanicus, Wagler.
Adult.
Trionyx javanicus, Geoffroy.
Trionyx javanicus, apud Schweigger and Gray.
Gymnopus javanicus, Duméril and Bibron.
Tyrse javanica, Gray: Catal.

Very Young.—Above olive green; the head and upper part of the neck with numerous small white spots, becoming larger and more

distant on the cheeks and chin; on the vertex, two round black spots; on the occiput two diverging black lines; the shell with several large black white-ringed spots, between which numerous smaller indistinct white spots; margin pale white; several longitudinal ridges, composed of close minute tubercles. Beneath greenish white.

Older.—Above uniformly olive-green; the longitudinal ridges of the shell consisting of tubercles, more distant and proportionally smaller than in the very young.

Habit.—*Malayan Peninsula, Pinang.*

Java, Dukhun, "India," "China."

This species is numerous in rivers and ponds. The largest individual observed was of the following dimensions:

Length of the head, ...	$2\frac{1}{8}$ inch.
Ditto ditto neck, ...	$2\frac{2}{8}$
Ditto ditto shell, ...	$6\frac{3}{8}$
Ditto ditto tail, ...	$0\frac{6}{8}$

Gymnopus indicus, (Gray.)

Syn.—Testudo chitra, Buchan. Ham. MSS.
Trionyx, indicus, Gray.
Trionyx ægyptiacus, Var. indica, Gray: Ill. Ind. Zool.
Gymnopus lineatus, Duméril and Bibron.
Chitra indica, Gray: Catal.

Shell remarkably depressed, smooth.* Above greenish olive, vermiculated and spotted with brown or rust colour; beneath greenish white.

Habit.—*Pinang, Malayan Peninsula, (Estuaries, Sea Coast).*

Rivers in India, Philippine Islands.

At Pinang this species is frequently taken in the fishing stakes. The Chinese inhabitants greatly relish this as well as the preceding species of *Gymnopus*, as articles of food. Individuals weighing 240lbs. occur in the Ganges, and others of gigantic dimensions are not uncommon at Pinang. It is very powerful, and of ferocious habits. The largest individual measured:

* In the living adult no longitudinal central depression is apparent, nor the outline of the costæ, as represented in the figure in *Illustrations of Indian Zoology*.

Length of the head, ...	0 feet	6 inch.
Ditto ditto neck, ...	0	5
Ditto ditto shell, ...	3	1
Ditto ditto tail, ...	0	4

FAM. THALASSIDÆ, OR TURTLES, *Dum. and Bibr.*

GEN. CHELONIA, *Brogniart.*

Body covered with horny plates; fins with one or two nails.

Sub-Gen. Chelonia liberæ (*Chelonées franches*). *Dum. and Bibr.*

Discal shields 13, not imbricate; muzzle short, rounded; upper jaw slightly notched in front, toothed on the sides; lower jaw formed of three pieces, and with the edges deeply toothed; the first finger of each fin nailed.

CHELONIA VIRGATA, Schweigger.

SYN.—Turtle of the Red Sea, Bruce.
Chelonia virgata, apud Cuvier, Guerin, Duméril and Bibron, Gray: Catal.
Chelonia midas, Var. D. Gray.
Chelonia fasciata, Cuvier, apud Schlegel.
"Pinyú" of the Malays of Pinang.

Young.—Head, shell and fins greenish black; margin of the shell and fins and sternum white.

Adult.—Head and fins chestnut, scales edged with yellow; shell greenish yellow with chestnut rays and spots; sternum gamboge, or greenish yellow.

HABIT.—*Malayan Seas.*

Teneriffe, Rio Janeiro, Cape of Good Hope, New York, Indian Ocean, Red Sea.

This species is at all seasons plentifully taken in fishing stakes in the straits of Malacca, and is the "Green Turtle" of the European inhabitants of our Malayan settlements, and of the sea-ports of India. In size it equals *Chelonia midas*, Schweigger, which it rivals in flavour. About December and January is the season when the female deposits her eggs in the sandy beach of some sequestered island, and then the fishermen watch during the moonlight nights to "turn turtles." The eggs are of a spherical shape, about one inch in diameter, covered by a soft hemitransparent membrane of a pale yellow colour. The expert eye of the fishermen baffles the pains with which the turtle conceals her eggs, and prodigious numbers are disinterred.

They are very rich, flavoured like marrow, and will keep for weeks although exposed to the air.

M. M. Duméril and Bibron have pointed out the differences between the adult of the present species and *Chelonia midas*, Schweigger, principally consisting in colours, and in the form of the vertebral and costal shields, to which may be added the comparative greater length of the fronto-nasal shields in *Chelonia virgata*, in which the breadth is one-third of the length, whereas in *Chelonia midas* it is one-half, and these proportions appear to be constant in all ages of the two species. The very young of both greatly resemble each other in colours and shape. Six living young of the present species were all of the following dimensions:

Length of the head, ...	$0\frac{7}{8}$ inch.
Ditto ditto neck, ...	$0\frac{4}{8}$
Ditto ditto shell, ...	2
Ditto ditto tail,...	$0\frac{2}{8}$

The following slight differences are the result of a comparison between the living young of *Chelonia virgata* and the representation of *Chelonia midas* given by Schoepff. Tab. XVII. Fig. 2.

Chelonia virgata.	*Chelonia midas.*
1. Shell cordiform; the length exceeds the breadth by one-eighth.	1. Shell ovate; the length exceeds the breadth by more than two-eighths.
2. 2d vertebral shield much broader than 1st, and is altogether the largest of the series.	2. 1st and 2nd vertebral of equal dimensions.
3. 2d costal shield larger than the 3d.	3. 2d and 3d costal equal.
4. Sincipital plate broader than long.	4. Sincipital plate longer than broad.
5. Breadth of fronto-nasal shields one third of their length.	5. Breadth of fronto-nasals one half of their length.
6. Each fin with a single nail.	6. Each fin with 2 nails.

Sub. Gen. Cheloniæ imbricatæ, (Chélonées imbriquées,) Dum. and Bibr.

Discal shields 13, imbricate; muzzle long, compressed; jaws with the edge straight, not toothed, at the extremity slightly recurved: each fin with 2 nails.

CHELONIA IMBRICATA, (Linné.)

SYN.—La Tortue Caret, Dutertre.
Scaled Tortoise, Grew.
Caret, Labat, Fermin, Lacép., Bosc, Cuvier.
Testudo marina americana, Seba.
Hawksbill Turtle, Brown, Catesby.
Testudo imbricata, Linné, apud { Gmelin. Pennant. Donnd. Schoepff. Latreille. Schneider. Shaw. Daudin.
Testudo caretta, Knorr.
La Tuilée, Daubenton.
Caretta imbricata, Merrem, apud Gray: Catal.
Chelonia multiscutata, Kuhl?
Chelonia imbricata, Schweigger, apud. ..... { Prince Maxim. Gray. Duméril and Bibron. Prince Musignano. Bell.
Chélonée faux caret, Lesson.
Chelonia caretta, Temminck, and Schlegel.
"Kúra-kúra" of the Malays of Pinang.

Head brown, scales edged or rayed with yellow; shell yellow, marbled or rayed with rich brown; sternum yellowish white. In the young the areola of the sternal shields black.

HABIT.—*Malayan Seas.*
Atlantic and Indian Ocean.

The largest individual observed was of the following dimensions:

Length of the head, ...	0	feet	$4\frac{4}{8}$ inch.
Ditto ditto neck, ...	0		$3\frac{4}{8}$
Ditto ditto shell, ...	1		7
Ditto ditto tail, ...	0		$2\frac{2}{8}$

Sub. Gen. Caouanæ, (Caouanes,) Dum. and Bibr.

Discal shields 15, not imbricate; jaws at the extremity slightly recurved.

CHELONIA OLIVACEA, Eschscholtz: Atlas.

SYN.—Chelonia caouana, Var. B. Gray.
Chelonia dussumierii, Dum. and Bibr.
Caouana olivacea, Gray: Catal.

Young.—Above blackish olive, lighter than in the adult; shell and fins edged with pale yellow; sternum pale greenish yellow, washed with chestnut, areolæ blackish.

Adult.—Head brown; shell blackish green; some of the marginal scales of the fins yellow; sternum yellow, washed with chestnut; 27 marginal shields; fins with one nail.

Habit.—*Malayan Seas.*

Bay of Bengal, Chinese Seas.

This species is at Pinang of rare occurrence. A single young individual observed was of the following dimensions:

Length of the head, ...	$1\frac{7}{8}$	inch.
Ditto ditto neck, ...	1	
Ditto ditto shell, ...	6	
Ditto ditto tail,.....	$0\frac{7}{8}$	

The shell is broad sub-cordiform, (its length exceeding its breadth by half an inch,) three-keeled, the vertebral keel strongest, dentated behind; the marginal shields 27, obliquely placed. The 1st and 4th pair of costals, and the 4th vertebral shield each divided in two pieces.

In a not quite full-grown specimen, in the Museum of the Asiatic Society, the length of the shell is 2ft. $1\frac{4}{8}$ inch; its greatest breadth is 2ft. $0\frac{4}{8}$ inch, the length exceeding the breadth by one inch. The vertebral shields are still slightly keeled. The 1st and 4th pair of costals, the 2nd left costal, and the 4th vertebral are divided. The central part of the margin is slightly curved upwards. The edges of the jaws are not toothed, but they are transparent with fine white vertical lines, which give them a fringed appearance.

The flesh of this turtle, though relished by the Chinese settlers, is unpalatable to Europeans.

SAURIA.

FAM. CROCODILID.E, *Bonaparte* (ASPIDIOTES, *Dum. and Bibr.*)

Sub. Gen Crocodilus, apud Cuvier.

Muzzle oblong, depressed; teeth unequal, the 4th of the lower jaw fitting into lateral notches, and not into hollows of the upper jaw. Skull behind the eyes with two large holes, perceptible through the integuments. Hind-feet with an external dentated crest, and the toes palmated.

CROCODILUS VULGARIS, Cuvier.—VAR. B., Dum. and Bibr.

SYN.—Crocodilus palustris, Lesson.
Crocodilus vulgaris, Var. E. Gray.
Crocodilus biporcatus raninus, Müller, Tab. 3, Fig. 7.
Crocodilus palustris, apud Gray: Catal.
"Buáya" of the Malays.

Muzzle a little widened, thick, transversally very slightly curved; head covered with angular rugosities; lateral margins of the skull not raised. Above greenish-olive, speckled with black; beneath yellowish or greenish-white.

HABIT.—*Malayan Peninsula and Islands.*

Java, Sumatra, Tenasserim, Bengal, Coromandel, Malabar.

It inhabits not only rivers and estuaries, but also the sea-coasts, and may in calm weather be seen floating at a distance of two to three miles from the shore. Although numerous at Pinang and the opposite coast, it appears to be less so than *Crocodilus biporcatus*. Fishermen while working the nets are not seldom attacked by Crocodiles, and would, but for their presence of mind, oftener than they do, forfeit their lives. When seized, they force the fingers into the eyes of the Crocodile, which immediately lets go its victim, who is farther rescued by his comrades.—From 1842 to 1845 amputations from accidents of this description, were unfortunately of no rare occurrence in the General Hospital at Pinang.

Individuals, 15 feet in length are not uncommon; some attaining to 20 feet and upwards are reported to occur.—In rivers a single one will often appropriate to himself a limited district, which if it happens to be in the vicinity of a village, will soon be perceived in the loss of the grazing cattle. Instances of Malays, who, to avenge the loss of a relative, have watched the crocodile, and by diving from below, plunged a Kris into its

heart, are on record. The eggs are white, the shell hard, of a cylindrical form, upwards of 3 inches in length, and about $1\frac{1}{2}$ inch in diameter.

CROCODILUS POROSUS, Schneider.

SYN.—Crocodili Ceylonici ex ovo prodiens, Seba.

Cr. biporcatus, Cuvier, apud { Tideman, Oppel, Liboschitz. / Merren. / Bory de St. Vincent. / Fitzinger. / Lesson. / Guerin. / Wagler. / Gray.

Crocodilus biporcatus raninus, Müller, Tab. 3, Fig. 8.
Crocodilus porosus, Schn., apud Gray: Catal.
"Buáya" of the Malays.

Upper jaw surmounted by two rugged ridges, each commencing from the anterior angle of the eye; nuchal plates either none, or two very small. Above yellowish green with large black oval spots; keels of the dorsal scales green; beneath greenish white.

HABIT.—*Malayan Peninsula, Pinang, Singapore.*

India, Tenasserim, Sumatra, Java, Timor, Seychelle Islands.

This, in the Malayan countries exceedingly numerous species, is of the same habits, and attains to the same size as the preceding.

FAM. GECKONIDÆ, *Bonaparte* (ASCALABOTES, *Dum. and Bibr.*)

GEN. PLATYDACTYLUS, *Cuvier.*

Toes more or less dilated throughout their length, beneath with transverse imbricate plates, either entire or divided by a central longitudinal groove.

PLATYDACTYLUS LUGUBRIS, Dum. and Bibr.

SYN.— Amydosaurus lugubris, Gray.

Thumbs nailless; transverse plates beneath all the toes; back finely granular. Above whitish, with black spots.

HABIT.—*Pinang.*

Otaheite.

A single male was captured in my house in the valley of Pinang. The integuments correspond to the description given by M. M. Duméril and Bibron, to which may be added the following characters:

The skin is somewhat loose, forming a slight longitudinal fold on each side of the body, and on the anterior margin of the thigh. The anus is covered by a transversal fold, reaching across from the one thigh to the other. There are no femoral pores. The tail is tapering, much depressed, convex on the upper surface, flat beneath, sharp at the sides. Near the root, about $\frac{2}{8}$ of an inch distant from the anus, the skin forms an annular fold, completely encircling that part of the tail. The colour slightly differs from that of the Otaheite individuals. The upper parts and the lower surface of the tail from the annular fold are of a buff or pale dust colour, so closely and minutely dotted with reddish brown, that the parts have a pale greyish brown appearance. On the loins and between the shoulders are a few distant blackish spots, besides in the latter place appear two short lateral lines, and an indistinct band proceeds from the nostril across the eye to the shoulder. The throat, inner side of the limbs, abdomen and the lower surface of the root of the tail to the annular fold are buff-coloured. The pupil is black, vertical, dentilated, the iris silvery, dotted with reddish brown.

Length of the head	$0\frac{4}{8}$	inch.
Ditto ditto trunk	$1\frac{2}{8}$	
Ditto ditto tail	$1\frac{3}{8}$	
Entire length	$3\frac{1}{8}$	inch.

Platydactylus gecko, (Linné.)

Syn.—Salamandra indica, Bontius.
Gekko ceilonicus, Seba.
Lacerta cauda tereti mediocri, Linné mus. Adolph.
Lacerta gecko, Linné.
Gekko teres, Gekko verticillatus, } Laurenti.
Salamandre, ou Gecko de Linneus, Knorr.
Stellio gecko, Schneider
Common Gecko, Shaw.
Gecko guttatus, Daudin, apud Gray.
Lacerta guttata, Hermann.
Gecko verus, Merrem, apud { Gray. Zool. Journ. / Gray. Catal.
Gecko annulatus, Kuhl
Gecko à gouttelettes, Cuvier
Platydactylus guttatus, Cuv. apud Gucrin, Dum. and Bibr.
"Toké" of the Malays.*

* The Malays denominate the family of *Geckotidæ*: *Gékko, Kéko, Gágo, Goké*, evidently Onomatopoeias, in imitation of the cry of these lizards.

Above ash-coloured with numerous pale orange spots; beneath yellowish white. Between the scales of the back 12 longitudinal rows of large distant tubercles, and six similar on the tail; the latter with minute scales beneath.

Habit.—*Malayan Peninsula.*
Philippine Islands,

Java, Tenasserim, Burmah, Bengal, Coromandel Coast.

On the Malayan peninsula this species appears to be less numerous than in the Tenasserim Provinces, where its shrill cry, "To-ke" is nightly heard in houses. The male has two tubercular scales on each side of the root of the tail. The largest individual observed was of the following dimensions:

Length of the head, ...	$1\frac{7}{8}$ inch.
Ditto ditto trunk, ...	$4\frac{2}{8}$
Ditto ditto tail, ...	$4\frac{5}{8}$
Entire length	$10\frac{6}{8}$ inch.

Platydactylus stentor. N. S.

Syn.—"Toké" of the Malays.

Above light bluish grey with numerous irregular blackish spots, forming on the vertex an angle like an inverted V., and on the neck short oblique lateral bands. Beneath pearl-coloured. On the back and sides 10 longitudinal rows of large distant lenticular scales, and 6 similar on the tail; the latter with scutella beneath.

Habit.—*Pinang.*

In form and size this species closely resembles the preceding, from which it however differs in the following particulars. The oval nostrils are bordered in front by three scales, viz. the first upper-labial, a smaller rectangular, and a larger pentagonal scale, both of which latter are situated between the nostril and the rostral. Above the nostrils are surrounded by two smaller irregular triangular, and behind by a narrow crescent-shaped scale. Of labial scales there are 14 above, 12 below. There are about 72 teeth in each jaw. The eye is very large; pupil black dentilated; iris silvery bluish grey. The ear is very large, ob-

liquely oval without dentilations. The cheeks are much swollen. The scales of the back are small, rounded, hexagonal, becoming more rectangular on the sides. The rows of lenticular scales along the vertebræ are smaller than the rest, but not so close as in *P. guttatus*. Behind the mental scale is a pair of large elongated scales, and 5 pentagonal larger appear on each side behind the lower labials. The gular scales are small, polygonal; the abdominal are rounded, hexagonal, not imbricate, and below the root of the tail become somewhat larger. The rest of the lower surface of the tail is covered with scutella. Above the covering of the tail is like that of *P. guttatus*. On each side of the posterior margin of the cloaca are two very large tubercular scales, and towards the centre two rather large postanal pores, covered by a loose fold of the skin. Fourteen femoral pores are placed on a slightly angular line. This species is also closely allied to *Platydactylus monarchus*, Schlegel, from which it however readily may be distinguished by the regular rows of lenticular dorsal scales, by its far greater size, and by its loud note. It is not numerous at Pinang. The only individual obtained, from the villa on the Pentland Hills, was a male of the following dimensions:

Length of the head,.....	$2\frac{2}{8}$ inch.
Ditto ditto trunk, ...	$5\frac{4}{8}$
Ditto ditto tail, ...	$8\frac{2}{8}$
Entire length	1 ft. 4 inch.

Platydactylus monarchus, Schlegel, MS.

Syn.—Platydactylus monarchus, Schl. apud Dum. and Bibr.
Gecko monarchus, Gray: Catal.

On the back, sides and limbs numerous conical tubercles irregularly scattered among the smaller flat polygonal scales; on the upper surface of the tail 6 to 13 transversal series of small spines; beneath scutella, sometimes mixed with scuta. Chin with 2 larger oblong scales.

New-born.—Above brown, with the dorsal and caudal tubercles (no spines) white; the posterior part of the tail indistinctly white ringed; beneath uniformly paler brown.

Adult.—Above buff or ash-coloured or reddish brown, with 8 to 12 pairs of irregularly rounded, distant, dark brown spots along the spine;

the head, limbs and sides with numerous more or less distinct, irregular dark brown spots; in some younger individuals the tail with whitish rings. Beneath yellowish white.

Habit.—*Malayan Peninsula, Pinang, Singapore.*
Philippine Islands, Amboyna, Borneo.

The Malayan *Geckonidæ* have the power of somewhat changing the ground colour, none however in a greater degree than the present species. In the valley and on the hills of Pinang it is very numerous, swarming at night in rooms, on the walls, and under the ceiling, occasionally giving out a sound, resembling the monosyllable "Tok," repeated 6 or 8 times with increased celerity. The aim of these lizards is by no means unerring; they frequently miss an insect, and fall from the ceiling. Among themselves they are pugnacious: when two or more covet an insect, the successful one has to defend its prize, or give it up to the stronger. The new-born (with umbilical aperture) and adult are of the following dimensions:

	New-born.	*Adult.*
Length of the head, ...	$0\frac{3}{8}$	$1\frac{2}{8}$ inch.
,, ,, trunk, ...	$0\frac{5}{8}$	$2\frac{2}{8}$
,, ,, tail, ...	$1\frac{1}{8}$	$3\frac{1}{8}$
Entire length, ...	$2\frac{1}{8}$	$6\frac{5}{8}$ inch.

Sub-Gen. Ptychozoon, Kuhl.

Toes webbed to the last compressed joint; thumbs nailless; sides of the head, body, limbs and tail with broad scaly membranes, those of the tail anteriorly scalloped. Male with femoral pores. On the sides scattered tubercles.

Ptychozoon homalocephalum, (Creveld.)

Syn.—Lacerta homalocephala, Creveld.
Gecko homalocephalus, Tilesius.
Ptychozoon homalocephalum, apud { Fitzinger. Wagler. Wiegmann.
Pteropleura horsfieldii, Gray.
Platydactylus homalocephalus, Cuv. apud Dum. and Bibr.
Ptychozoon homalocephala, Kuhl. apud Gray: Catal.

Head. The ground colour yellowish green olive. Between the eyes and muzzle a double figure, in whitish outline, representing in front a

broad arrowhead, posteriorly united by a narrow stalk to a rectangular transversal band, situated in front of the eyes. On the vertex another, larger figure, traced in whitish outline, rectangular in front, spreading like a four-rayed star over the occiput. A dark brown band proceeds from behind the eye, across the ear, to the shoulders, where it is lost in the general dark brown colour of the sides of the body. The superior margins of these two lateral bands are white proceeding backwards in zig-zag line, approaching each other over the shoulders, where they join the anterior black transversal line. The lips white. The membranes of the cheeks pale flesh-colour, with dark blue spots, and with the interstices between the scales pale lilac. The pupil vertical, dentilated; the iris rich golden brown.

Back. Of the same ground colour as the head, becoming dark reddish brown on the sides, relieved by 4 to 6 distant transversal black dotted lines, on the upper part of the form of the letter M, sending oblique, forwards pointed, lines on the sides. The upper part of the lateral membrane reddish brown; the interstices of the small rectangular scales purple.

Tail and *limbs.* Same ground-colour, as that of the head and back, with broad, distant, indistinctly whitish, transversal bands. On each elbow a whitish ring. Membranes of the tail, limbs and toes are yellowish grey with numerous minute spots of brown, purple, blue and red, which impart a purple, changing appearance to the general colour. The number of the indentations of the caudal membranes varies individually; the posterior part is entire, with waving surfaces.

Lower parts. Brownish white, with a few pale brown spots on the throat, inner side of the limbs, in the palms and soles. The tail and its membranes brownish.

Habit.—*Pinang Hills.*

Singapore, Java, Ramree Island, (Arracan.)

As correctly observed by M. M. Duméril and Bibron, the scales of the female, corresponding to those with the femoral pores of the male, have a slight, yet distinct, central depression. The female has a large tubercular scale on each side of the root of the tail, as well as the male. In colour and size the two sexes resemble each other. Two individuals were at different times captured in the villa occupied by Sir William Norris on the Great Hill of Pinang. When the lizard

is at rest, the membranes of the cheeks, and the body are kept in close contact with these parts; in leaping those of the body are somewhat stretched out, and all the membranes together then act as a parachute. Also this lizard has in some degree the power of changing the ground colour from a darker to a lighter shade. The apex of the tongue is rounded, with a small notch in the centre. A female while in my possession refused insects and water. She deposited a single egg, of a spherical form, about half an inch in diameter, soft, and of a yellowish white colour, which the following day she devoured. A male ate the integuments he had been changing. The female was of the following dimensions:

Length of the head,	1 inch.
Ditto ditto trunk,	$2\frac{6}{8}$
Ditto ditto tail,	$3\frac{5}{8}$
Entire length,	$7\frac{3}{8}$ inches.

In the Museum of the Asiatic Society is preserved a specimen of *Leptophis ornatus*, (Merrem,) in the act of devouring one of the present species. The serpent was captured in the island of Ramree on the coast of Arracan.

GEN. HEMIDACTYLUS, *Cuvier*.

End of the toes widened into an oval disk, with a double series of transverse, imbricate plates beneath. From the middle of the disk rise the slender second and third nailed phalanx. A series of scuta beneath the tail.

HEMIDACTYLUS PERONII, Dum. and Bibr.

SYN.—Hemidactylus leiurus, Gray.
Peripia peronii, Gray: Catal.

Under the chin a large triangular figure, composed of six elongated, towards the sides decreasing, scales; thumbs nailless; male with femoral pores; tail much depressed, very broad at the root, tapering towards the point, (sometimes with a small membrane on each side of the point,) with a series of scuta beneath; pupil vertical, shaped like two rhombs placed with the angles towards each other.*

* Such is its appearance in the living animal, when the eye is exposed to the influence of light. M. M. Duméril and Bibron note the pupil being "elliptical," which probably originates in their describing from preserved specimens, although my own in spirits of wine have retained the original form of the pupil.

Above ash-coloured, labial scales whitish, each with a brown spot; beneath whitish. Iris silvery grey, spotted with brown.

Habit.—*Pinang.*

Isle of France.

Of two individuals, captured at different times in my house in the valley of Pinang, the larger was of the following dimensions:

Length of the head, ...	$0\frac{6}{8}$ inch.
Ditto ditto trunk, ...	$1\frac{5}{8}$
Ditto ditto tail, ...	$2\frac{3}{8}$
Entire length,	$4\frac{6}{8}$ inches.

Hemidactylus coctæi, Dum. and Bibr.

Thumbs well developed, nailed;* back with minute granular scales; in some individuals with a few larger ones on the sides; tail broad at the root, tapering, a little depressed, with from 4 to 15 indistinct rings and 6 series of minute spines; beneath with scuta; chin with 4 larger scales; the central pair elongate pentagonal; male with 12 femoral pores; pupil as in *Hemidactylus peronii.*

Above ash-coloured, whitish beneath.

Habit.—*Pinang.*

Bengal, Bombay.

Of two males observed in houses in the valley of Pinang, the larger was of the following dimensions:

Length of the head, ...	$1\frac{2}{8}$ inch.
Ditto ditto trunk, ...	$2\frac{4}{8}$
Ditto ditto tail, ...	$3\frac{2}{8}$
Entire length,	7 inches.

Hemidactylus frenatus, Schlegel, MS.

Syn.—Hemidactylus frenatus, Schlegel, apud Dum. and Bibr.
Hemidactylus lateralis, } Gray: B. M.
Hemidactylus quinquelineatus, }

Back with some larger granular scales; tail rounded, tapering above, with 6 series of small spines, scuta beneath; chin with 4 or 6 larger

* Mr. Gray gives the present species as a Syn. of *Boltalia sublævis*, Gray, (Catalogue, p. 158.) As the latter species is characterised as having the thumbs "clawless," it cannot be identical with *H. coctæi.*

scales; ears very small; pupil as in the preceding species; thumbs very small, femoral pores 26 to 28, disposed on a slightly angular line.

Young and Adult.—Buff or ash-coloured, with or without brown spots; some with one or two brown lateral bands, commencing one above the other from the muzzle, interrupted or continued to the tail; the latter in some with indistinct brown rings. Beneath whitish or buff.

Habit.—*Malayan Peninsula, Pinang, Singapore.*
Amboyna, Timor, Java, Marianne Islands, Ceylon, Bengal Assam,* South Africa, Madagascar.

In the Malayan valleys and hills this small species is very numerous. It is of fierce habits, like several other *Geckonidæ*, destroying its own species. Its normal colour appears to be greyish, which it however has in its power to change. The largest individuals observed were of the following dimensions:

Length of the head, ...	$0\frac{5}{8}$ inch.
Ditto ditto trunk, ...	2
Ditto ditto tail, ...	2
Entire length,	$4\frac{5}{8}$ inches.

Hemidactylus platyurus, (Schneider.)

Syn.—Stellio platyurus, Schneider.
Lacerta schneideriana, Shaw.
Gecko platyurus, Merrem.
Hemidactylus platyurus, Wiegmann.
Hemidactylus marginatus, Cuvier, apud { Wagler. Wiegmann. Gray.
Platyurus schneiderianus, Gray: Catal.

Sides of the body and posterior margin of the thighs with a loose membrane; tail tapering, depressed, with sharp, fringed margins, with scuta beneath; toes webbed half their length; chin with 4 pentagonal broad scales, placed in pairs, behind each other: 26 femoral pores placed on a continued line.

Young and *Adult.*—Above ash-coloured, in some with a greyish brown lateral band, from the muzzle continued to the tail; the latter with indistinct brownish transversal bands; others irregularly spotted and

* Specimens in the Museum of the Asiatic Society.

marbled with blackish brown; pupil and iris as in the preceding species. Whitish beneath.

Habit.—*Pinang.*

Philippine Islands, Borneo, Java, Bengal, Assam.*

The individuals were observed in houses in the valley of Pinang. In a male the posterior half of the tail happens to be divided so as to appear double; one of the pieces, the continuation of the normal tail, is depressed, slightly fringed, and beneath with the row of scuta continued, the other is cylindrical, somewhat shorter, and above and below covered with minute scales. The largest individual was of the following dimensions:

Length of the head, ...	$0\frac{5}{8}$ inch.
Ditto ditto trunk, ...	2
Ditto ditto tail, ...	$2\frac{1}{8}$
Entire length,	$4\frac{6}{8}$ inches.

Gen. Gymnodactylus, *Spix.*

Toes not widened into a disk, nor with dentilated margins; all five with non-retractile nails; fifth hind-toe versatile or capable of turning from the others under a right angle.

Gymnodactylus pulchellus, (Gray.)

Syn.—Cyrtodactylus pulchellus, Gray.
Gonyodactylus pulchellus, Wagler.
Gymnodactylus pulchellus, Duméril and Bibron.

Head, back and limbs with numerous three-sided tubercles among the smaller flat scales; sides of the body with a longitudinal fold of the skin; the anterior upper part of the cylindrical tail with distant rings of rounded, pointed tubercles; beneath a row of scuta. Chin with six scales, the centre pair elongated pentagonal. Males with 36 femoral pores on two not connected lines, between which, in front of the anus, a short narrow, longitudinal furrow. Both sexes with 3 or 4 tubercles obliquely situated on each side of the root of the tail.

Young and *Adult.*—Above a rich brownish ochre; the nape of the neck and back with 6 broad transversal bands (the two anterior horse-shoe shaped), of a rich velvety mulberry, or snuff-colour with sulphur

* Specimens in the Museum of the Asiatic Society.

or chrome-yellow margins. The tail with 8 or 9 complete rings of similar colour, without the margins. Beneath: throat and belly whitish yellow, or pale brownish, each scale minutely dotted with brown. Pupil vertical, dentilated; iris golden, finely vermiculated with Van Dyke brown.

Habit.—*Pinang Hills.*

Singapore.

In the male the two rows of femoral pores commence as two short parallel longitudinal lines, separated from each other by a narrow short furrow, on the sides of which, (vertically,) the first 5 femoral (preanal), pores are placed. In front of the anus the short vertical portions turn right and left under a nearly right angle, continuing the entire length of the thigh, each supporting 13 more femoral pores. The interval between the anus and the latter is partly occupied by a flat, slightly raised triangular space, covered by rather large, imbricate, rounded scales. In the female the two lines of larger scales carrying the femoral pores of the males, are present, each scale having a small shallow, round depression. The short, longitudinal furrow of the male is either wanting or barely distinguishable, but the triangular space with larger scales, in front of the anus, is present. The species appears to be rather numerous on the hills at Pinang, where the individuals obtained were captured in houses, at an elevation of 2,200 feet. The largest male was of the following dimensions:

Length of the head, ...	$1\frac{4}{8}$ inch.
Ditto ditto trunk, ...	3
Ditto ditto tail, ...	$5\frac{4}{8}$
Entire length,	10 inches.

Its habits offer nothing peculiar: it bites fiercely in defence. In captivity it refuses insects. The integuments, when about being renewed, are piecemeal torn off by the teeth, and devoured. A single egg deposited was of a spherical form, about half an inch in diameter, of a whitish yellow colour. M. M. Duméril and Bibron assign Bengal as the Habitat of this species. The specimen originally described by Mr. Gray, some in the Museum of the Asiatic Society, and a number in my own collection, all are from the hills of Prince of Wales Island (Pulo

Pinang,) but no authenticated record exists of this species ever having been observed in Bengal. Another, widely different species of *Gymnodactylus* inhabits Bengal, as yet not published, and only known from three specimens, preserved in spirits in the Museum of the Asiatic Society, where they are marked *Gymnodactylus lunatus*, Blyth. One of these came from Midnapore, the others from Chyebassa. The species somewhat approaches to *G. fasciatus*, Dum. and Bibr. (*Cubina fasciata*, Gray.) The Museum possesses another nondescript species from Almorah, *Gymnodactylus nebulosus*, Blyth, MSS. allied to *G. marmoratus*, (Gray).

The plate of *Cyrtodactylus pulchellus* in Gray's Illustrations of Indian Zoology is not taken from life, and gives a most inadequate idea of the physiognomy and beauty of the living animal. This should be observed, as M. M. Duméril and Bibron praise the figure, which evidently has served as original of their own description, and of copies introduced in illustrative works upon that order of animals.

FAM. VARANIDÆ, *Bonaparte*, (PLATYNOTES, *Dum. and Bibr.*)

GEN. VARANUS,—*Merrem.*

Scales set side by side, surrounded by an annular series of very minute tubercles; tail above more or less trenchant; on the throat a fold in front of the chest.

Varani aquatici,—Dum. and Bibr.

VARANUS NEBULOSUS,—Duméril and Bibron.

SYN.—Tupinambis nebulosus, Cuvier MSS.
Monitor nebulosus, Gray.
Monitor nebulatus, Schlegel.
Varanus nebulosus, apud Gray: Catal.

Muzzle very elongated; nostrils obliquely cleft, situated half-ways between the muzzle and the anterior angle of the eye; lips each with 50 scales; teeth compressed with sharp but not dentilated edges.

Young.—Above. Ground-colour deep chocolate brown; the head largely marbled with greenish yellow; neck with indistinct obliquely converging gamboge lines; back, sides and limbs with gamboge spots, consisting of one to five scales, (those of the upper margins of the fingers forming continued lines;) sides of the anterior half of the tail, similarly coloured; the double row of scales covering the back of the tail gamboge;

the posterior half deep chocolate with two distant, (the second subterminal,) indistinct gamboge coloured rings.

Beneath. Ground-colour pale chocolate. Chin, throat, chest and forelimbs transversely undulated with greenish yellow; abdomen with short, interrupted, transversal yellow bands, consisting of from 4 to 12 scales; hind-limbs with larger similar spots; anterior half of the tail indistinctly marbled with yellowish green; posterior half like the upper surface. Pupil round; iris narrow golden.

Adult.—Above brownish olive with yellow dots; anterior half of the tail yellow with minute square brown spots; posterior half brown and yellow-ringed; margins of the toes yellow. Beneath marbled and barred with brown and yellow.

Habit.—*Pinang.*

Java, Siam, Bengal.

The only individual observed was a young male, captured in the hills at Pinang, of the following dimensions:

Length of the head, ...	$1\frac{5}{8}$ inch.
Ditto ditto trunk, ...	$5\frac{2}{8}$
Ditto ditto tail, ...	$9\frac{1}{8}$
Entire length,	16 inches.

Varanus flavescens, (Gray).

Syn.—Monitor flavescens, Gray.
Monitor hardwickii, Gray, MSS.
Varanus russellii, Schlegel, MSS.
Monitor exanthamaticus, Var indica, Schlegel.
Varanus picquotii, Dum and Bibr.
Empagusia flavescens, Gray: Catal.

Muzzle obtuse; nostrils oval, oblique, nearer the muzzle than the orbit; a series of supraorbital scales larger than the rest; scales of the back distant, bluntly keeled, of the tail and outside of the hind-limbs closer, sharply keeled; toes very short, nails yellow.

Above. Ground-colour light green-olive with numerous distant, interrupted, transversal, yellow bands; temples, cheeks and lips yellow. Beneath yellow; the throat with transversal pale brownish bands.

Habit.—*Pinang.*

Bengal, Nipal.

A single male observed was of the following dimensions:

Length of the head, ...	0 feet 3	inch.
Ditto ditto trunk, ...	1	$0\frac{5}{8}$
Ditto ditto tail, ...	1	$6\frac{1}{8}$
Entire length, ...	2 feet	$9\frac{6}{8}$ inch.

VARANUS SALVATOR. (Laurenti).

SYN.—Lacertus indicus, Lochner?
Lacerta mexicana, Seba.
Lacertus americanus, amphibius Tupinambis dictus: Seba.
Stellio salvator, Laurenti.
Monitor Lizard, Shaw.
Lacerta monitor? Hermann.
Tupinambis bivittatus, Kuhl, apud Boie.
Monitor elegans, Gray.
Monitor à deux rubans, Cuvier.
Hydrosaurus bivittatus, Wagler.
Monitor vittatus, Lesson.
Varanus bivittattus, Duméril and Bibron.
Hydrosaurus salvator, Gray: Catal.
"Beyáwak" of the Malays of the Peninsula.

Head very elongated; nostrils oval, nearly transversal, close to the muzzle; a series of supraorbital scales, larger than the rest; teeth with dentilated edges; toes very long. Above. Ground colour dark brown or black; a band on the side of the neck from the shoulder to the eye, 5 to 7 distant, transversal series of separate rings, between which numerous spots or interrupted transversal lines, all yellow or yellowish white; the outside of the limbs and the tail spotted, the latter indistinctly banded with yellow. Beneath yellow, the throat with indistinct transversal black bands and minute spots; the sides of the body and limbs in some individuals with large blackish dentilations.

HABIT.—*Malayan Peninsula, Pinang.*

Philippine and Molucca Islands, Amboina, Java, Bengal.

This species is very numerous both in hilly and marshy localities. It is commonly during the day observed in the branches of trees overhanging rivers, preying upon birds and their eggs, and smaller lizards, and when disturbed, it throws itself from a considerable height into the water. When attacked on level ground, it attempts its escape by running, if possible towards the water. Its quickness however is not so great as to prevent a man from overtaking it, when it will courageously defend itself with teeth and claws and by strokes of the tail. The

lowest casts of Hindoos capture these lizards commonly by digging them out of their burrows on the banks of rivers, for the sake of their flesh, which by these people is greatly relished.—Some individuals attain to nearly 7 feet in length, but the majority are smaller. A female examined was of the following dimensions :

Length of the head, ...	0 feet	$4\frac{4}{8}$ inch.
Ditto ditto trunk, ...	1	$3\frac{4}{8}$
Ditto ditto tail, ...	2	$8\frac{4}{8}$
Entire length,	4 feet	$4\frac{4}{8}$ inch.

FAM. IGUANIDÆ, Gray, (EUNOTES, *Duméril and Bibron*)

SUB-FAM. ACRODONTINÆ (ACRODONTES, Dum. and Bibr.)

GEN. CALOTES, *Cuvier.*

Head quadrangular pyramidal, more or less elongated, with small angular scales of nearly equal diameter. Occipital scale minute. Tongue thick, fungous, rounded, with the apex slightly notched. In the upper-jaw 5 incisors and 2 canines. Nostrils lateral, pierced through a plate situated close to the muzzle. No transversal fold on the throat, sometimes with a large longitudinal fold on both sides. A gular pouch varying in size. A crest from the nape of the neck to the tail. Scales of the sides of the trunk homogeneous, imbricated in oblique series. No femoral pores.

SUB.-GEN. BRONCHOCELA, *Kaup.*

Scales of the trunk in oblique series, inclined backwards, their points directed downwards. Posterior part of the sides of the head not swollen.

BRONCHOCELA CRISTATELLA, (Kuhl.)

SYN.—Lacerta mexicana strumosa, &c. Seba, 89, 1.
Agama cristatella, Kuhl.
Agama gutturosa, Merrem.
Bronchocela cristatella, Kaup, apud Dum. and Bibr.
Agama moluccana, Lesson, apud Schinz.
Calotes gutturosa, Guérin.
Calotes cristatellus, Schinz.
Calotes gutturosus, Wiegmann.
" Grúning" of the Malays of the Peninsula.

Cervical crest (6 to 10 scales,) abruptly decreasing on the anterior part of the back; scales of the side of the trunk keeled, scarcely half the size of those of abdomen; behind the posterior angle of the orbit

3 to 5 flattened scales, pointing outwards, forming a minute longitudinal crest.

Normal colours. Beautiful grass green, lighter beneath, entirely, or partially changeable to light grey, greyish olive, greenish brown, or blackish, sometimes with orange spots, or with indistinct black network; large isolated round spots on the head or back, or the lips, eyelids, or margins round tympanum, momentarily black; sometimes with transversal distant brown bands, particularly on the tail.* Scales of the outside of the limbs and feet edged with brown. Pupil circular; iris brown with a narrow golden ring.

Habit.—*Malayan Peninsula, Pinang, Singapore.*
Amboyna, Island of Buru, Java, Sumatra.

This species is very numerous in the Malayan countries both in the vallies and on the hills. It moves and leaps with great quickness among the branches of trees. The most striking feature is the great power of suddenly changing its colours. The Malayan denomination of this species is "*Gruning*," which in Marsden's Dictionary is translated "a species of lizard, which changes its colour as it is affected by fear or anger; the cameleon." No cameleon however appears to inhabit the Malayan countries, but the present lizard passes under that name among the European inhabitants. One of the largest males was of the following dimensions:

Length of the head, ...	0 feet	$1\frac{3}{8}$	inch.
Ditto ditto trunk, ...	0	$3\frac{6}{8}$	
Ditto ditto tail, ...	1	$2\frac{6}{8}$	
Entire length,	1ft.	$7\frac{7}{8}$	inch.

Those of the intestinal canal:

Small intestines, ...	$3\frac{4}{8}$	inch.
Large, „	$1\frac{4}{8}$	
Cœcum, „	$0\frac{4}{8}$	

The stomach is cylindrical, simply a continuation of œsophagus without fundus, but separated from the small intestines by a valve. In

* During life there is no trace of blue, or even bluish green about this lizard, but after death it sometimes acquires this colour from the effects of spirits of wine, to which circumstance must be attributed the denomination of "Blue Calotes," Gray, in Griffith's edition of Cuvier. Vol. 9, p. 55.

several dissected it contained nothing but mucus. The length of oesophagus and the stomach together was $1\frac{6}{8}$ inch. The anterior part of the small intestines is widened till about a quarter of an inch from the pyloric valve, where ductus coledochus enters. Cœcum is very widened, more so than any other part of the canal, of a crescent shape.

Gen. Lophyrus, *Dumeril.*

Head triangular, more or less elongated, shelving in front; orbital edge arched or angular; nostrils lateral, circular, or oval; tongue papillary, rounded and very slightly notched at the point; in the upper jaw 5 incisors and 2 canines; tympanum superficial; skin of the throat lax, forming in some a scarcely perceptible, in others a highly developed pouch, and an angular cross fold in front of the chest; neck, trunk and tail compressed, with a crest, generally most elevated on the nape of the neck; scales of the trunk rhombic, subimbricate, unequal, (with scattered larger scales); femoral pores none.

Lophyrus armatus, (Gray.)

Syn.—Agama armata, Gray.
Calotes tropidogaster, Cuvier.*
Acanthosaura armata, Gray.

Orbital edge slightly angular, with a long spine at its posterior extremity; no spinous tubercles on the occiput; on each side of the nape of the neck, immediately above the ear, another long spine, surrounded with 5 to 6 shorter ones, at its base, from whence proceed obliquely over the temple and cheek a curved series of 18 larger polygonal, keeled scales; tympanum thick, circular; on the neck a crest of 8 to 12 long spines, surrounded with numerous smaller ones at the base; at a short interval the dorsal crest, the anterior 5 to 6 spines of which are very long, the rest rapidly decreasing towards the tail; gular pouch very small, not toothed, with scales of equal size; tail subtriangular, with a toothed crest above.

Above. Head chestnut; trunk and limbs blackish green, with a black transversal band in the interval between the cervical and dorsal crests, continued over the shoulders, with numerous pale yellowish white, black-edged, rounded spots, assuming the shape of transversal bands on the limbs and the tail; the larger single scales on the sides, limbs and tail clear sky-blue; from the orbit over the lip 5 to 6 radiat-

* By mistake: Calotes lepidogaster, Régne anim. 1829. T. ii. p. 39.

ing, black lines. Beneath yellowish white. Pupil circular, iris brown, with a narrow golden ring.

Habit.—*Pinang, Singapore,*
Cochin China.

At Pinang this species appears to be very local, and not numerous: two individuals examined were obtained from spice plantations in the valley. They were very active and fierce, possessed in a slight degree the power of changing the ground-colour to a lighter hue, and in captivity refused food and water. In a female were found 13 eggs of a yellowish white colour, of an oval shape, $\frac{6}{8}$ inches in length. The stomach contained fragments of leaves and twigs, and a quantity of earth and lime. The latter probably originated from the lime water, with which the spice-trees are copiously sprinkled, to secure them against the attack of insects. The dimensions of the lizard were:

Length of the head,	$1\frac{1}{8}$ inch.
Ditto ditto trunk,	$3\frac{5}{8}$
Ditto ditto tail,	6
Entire length,	$10\frac{6}{8}$

Of the intestinal canal:

Small intestines,	$7\frac{4}{8}$ inch.
Large,	$1\frac{6}{8}$
Cœcum,	$0\frac{4}{8}$

The stomach capacious, with thick parietes. The first portion of Duodenum is much widened till within half an inch from Pylorus, where Ductus coledochus enters. Cœcum is of a crescent-shape, much widened, as well as the large intestine.

Gen. Dilophyrus, *Gray.*

Head four-sided. Forehead rather concave, face-ridge high. Eyebrows rounded. Occiput with 3 or 4 larger tubercles on each side.

Parotids unarmed. Nape and back with a crest of high compressed scales, with series of smaller scales at their base. The throat rather lax,* with a cross fold behind,† extending up the front of the shoulders. Scales of the back small, rhombic, equal; of the belly rather

* Add: *with a compressed pouch, minutely toothed in front.*

† *Questionable.*

larger, smooth. Tail compressed, keeled and toothed above, with 2 series of elongated keeled scales beneath. Femoral and preanal scales none.

DILOPHYRUS GRANDIS, Gray. (Pl. XX.)

HABIT.—*Pinang Hills.*

Rangoon.

As the only published characters of this species leave its identity with the Malayan somewhat doubtful, they are here preposed.

"*Olive green; sides white spotted, beneath whitish; tail black-banded; head with lines of rather larger scales; crest very high, formed of broad compressed close-set scales, with* 3 *or* 4 *series of scales on each side of the base, interrupted over the shoulders.*" *(Gray: Catalogue of the Specimens of Lizards, &c. p.* 239.*)*

Form. The head is elongated, four-sided pyramidal, its greatest height and breadth being equal, and less than one half of the length. The muzzle is narrow, rounded, depressed. The upper surface of the head is very sloping, with a narrow furrow between the arched orbital parietes; the forehead depressed or concave. The scales are polygonal, keeled; those of the margin of the orbits and forehead larger, imbricate, forming a sharp ridge; four similar scales form a short ridge in the centre of the forehead, close to the muzzle. Behind the orbit, over tympanum, and on each side of the nape of the neck are similar short, oblique ridges, each composed of 5 larger pointed tubercular scales. The rostral shield is very broad, narrow, triangular; the mental, is much smaller, pointed, triangular, with two large polygonal scales on each side. The upper jaw is covered with 26, the lower with 24 elongated, narrow, rectangular scales.

Dentition.

Incis. $\frac{6}{4}$; Canin. $\frac{1—1}{1—1}$; Molar, $\frac{14.14}{14.14} = \frac{36}{34}$.

The incisors and anterior molars are very small; the latter gradually increasing in size, flat, sharply edged, bluntly tricuspidate. The tongue is thick, flattened, very slightly notched in front, the anterior half spongy, the posterior with large backwards pointed papillæ. The nostrils are nearly circular, pierced in a large oval scale, in front of which 3 scales intervene between the rostral. The eyes are large, sunk in the orbits; the pupil circular, black; the iris blue with golden

Pl. XX.

DILOPHYRUS Grandis (Gray)

Dr Cantor, from life

T. Black Asiat. Lith. Press Calcutta

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spots and a narrow ring. The eyelids are covered with very minute polygonal, tubercular scales. Each tarsus with a double row of scales, the inner one of small, polygonal, tubercular; the outer one of rhombic, flat, with the angles overlapping, so as to give the free margin a toothed appearance. The tympanum is large circular. The skin of the throat is very lax, forming a compressed pouch, the anterior margin of which is slightly toothed, owing to the series of scales overlapping each other. But there is during life no trace of any "crossfold behind, extending up the front of the shoulders." The scales of the neck and back are very minute, rhombic, or sub-rectangular, smooth, increasing in size and becoming imbricate on the sides, abdomen, limbs and throat. On the neck is a high arched, toothed crest, composed of 26 large ensiform scales, the 13 anterior gradually increasing in length, the rest decreasing. The base of the crest is supported by two parallel, slightly arched, series of rectangular scales, much larger than those of the rest of the body, but those of the upper series double the size of those of the inferior. The dorsal crest commences at a short interval a little behind the shoulders. In shape and component parts it resembles the former, but is double the extent, consisting of 45 scales, all of which however are inferior in height to those of the cervical crest, which, as well as the somewhat lower, sloping level, renders the dorsal crest less conspicuous than the former. The skin is somewhat lax on the sides of the body, leaving the ribs visible. The tail is very much compressed, attenuated, elongated. Its sides are covered with rather large, smooth imbricate, rhombic scales. The anterior third of the upper margin is toothed, composed of a single row of large, gradually decreasing, sharply keeled scales. The other two thirds are covered by two rows of keeled scales, thus giving the posterior part of the tail a bidentated appearance. The lower surface of the tail is covered by two series of large, gradually decreasing, imbricate, keeled scales, giving it a bidentated appearance. The limbs are slender; the anterior little more than half the length of the posterior, and the toes very short. The posterior 4th toe is excessively long. The palms and soles are covered with minute, pointed, rough scales; the toes above and beneath with sharply keeled, imbricate, rhombic scales. The claws are large, trenchant, curved.

Colours. The ground-colour of the head, neck, throat, gular pouch, and the chest is impure gamboge, the scales edged with brown. The eyelids dark brown, the tarsi buff. A dark blue triangular streak proceeds from the anterior angle of the orbit to the nostril; another is placed parallel with the upper labial scales, which as well as the lower are of a pale blue, as also the tympanum. From the labial scales and tympanum on each side across the throat, the pouch, and the sides of the neck, proceed 7 oblique, undulating, dark blue bands. The tympanum is enclosed by two oblique broad, purple-brown bands, which join each other under an angle at the anterior extremity of the cervical crest, where a third broad, longitudinal purple-brown band commences, proceeding over the side of the neck, then expanding, covers the back and the upper half of the sides of the body, where its lower margin describes two large curves. The lower part of the sides are of a deep lilac, changing on the abdomen to bluish white. On the sides of the body and on the abdomen appear several oblique series of lozenge-shaped spots: a few on the brown portion of the sides of a deep Indian red, the rest bright gamboge. The cervical and dorsal crests are mulberry-brown; the former with the upper half of each of the first 13 scales light green; the latter with the upper half of the first 10 scales pale yellow. The scales at the base of the crests partake of the general colour, but many of them have a pale yellow spot. The tail is above and beneath with alternate broad rings of impure white, the scales edged with brown, and purple-brown, changing to black on the posterior half. The legs, feet and toes are dark purple-brown with indistinct transversal yellowish bands.

Dimensions.

Length of the head,.....	0 foot	2 inch.
Ditto ditto trunk,.....	0	$4\frac{4}{8}$
Ditto ditto tail,.....	1	4
Entire length,	1 foot	$10\frac{4}{8}$ inch.

Length of the cervical crest,.. $1\frac{7}{8}$ inch; height of 13th scale, $0\frac{6}{8}$ inch.
Ditto ditto dorsal crest,..... 3 inch; ditto ditto 15th scale, $0\frac{4}{8}$

Length of humerus,.....	1 inch;	of femur, ...	$1\frac{7}{8}$ inch.
Ditto ditto fore arm, ...	$1\frac{1}{8}$	of tibia, ...	2
Ditto ditto hand and 4th toe,	1	of foot and 4th toe,.	$2\frac{1}{8}$
Entire length,	$3\frac{1}{8}$ inch.		6 inch.

The only individual examined, was captured on a botanical excursion by Sir William Norris on the Pinang Hills, on the bank of a mountain stream, at an elevation of about 2,000 feet. It appeared slow in its movements, of general sluggish habits, showed no power of changing colours, and in confinement it refused insects, vegetable food, as well as water. After having been preserved in rectified spirits of wine for upwards of three years, the specimen has retained the original brown and white colours and the Indian red spot; but the yellow, light-green and light-blue have changed to whitish, and the dark blue marks to blackish. Although the colours in this state do not agree with those given by Mr. Gray, apparently though not stated, taken from a preserved specimen, the peculiar distribution of the markings correspond, and induce me to believe in the identity of the animals.

Gen. Draco, *Linné, apud Duméril and Bibron.*

Head triangular, obtuse in front, slightly depressed, covered with small scales of unequal diameter. Three or four incisors and 2 canines in the upper jaw. Tongue spongy, thick, rounded, entire.* Tympanum hidden ☞ in some, visible in others. In the centre of the throat an elongated vertical pouch; on each side a smaller horizontal. In general a small cervical crest.† Trunk depressed, with a lateral membrane, supported by the spurious ribs. No femoral pores. Tail very long, thin, angular, slightly depressed at the root.

A.—*Tympanum visible, metallic iridescent.*

Draco volans, Linné.

Syn.—Draco volans, apud Gmel., Latr., Gray.
Draco præpos, Linné, apud Gmelin.
Draco major, Laurenti.
Draco minor, Laurenti.
Le Dragon, Daubenton, Lacépède, Bonnat.
Flying Draco, Shaw.
Draco viridis, Daudin, apud Merr., Kuhl, Wolf, Wagler.
Draco fuscus, Daudin, apud Merr., Kuhl.
Draco borrowniensis, Lesson?
Draco daudinii, Duméril and Bibron.
"Chichak terbang" or "Kubin" of the Malays.

* In the following species the tongue is minutely, yet distinctly *notched*, ☞ i. e. *Dracunculus, Wiegmann.*

‡ The *female* of *Draco fimbriatus*, Kuhl, (i. e. *Draco abbreviatus*, Gray,) *D. volans* and *D. maculatus* differs from the male in having no cervical crest, and in having a smaller, less elongated gular pouch.

Scales of the back rhomboidal, imbricate, indistinctly keeled; of the throat granular, of equal size; the adult male with a small cervical crest; tongue minutely notched in front; gular pouch of the male very long, narrow, nearly double the length of the head; of the female shorter, broad triangular.

Adult male and female. Head metallic brown or green, with a black spot between the eyes. Back and inner half of the wing-membrane varied with metallic, iridescent dark brown and rose-colour, in some disposed in alternate transversal bands, with numerous black spots and short irregular waved or zigzag lines. Limbs and tail in some with rose coloured transversal bands. Sides of the neck and lips also rose coloured with black spots. Cheeks and eyelids silvery-white or sky-blue, the latter with short radiating black lines. Throat and gular pouch bright yellow, the former dotted with black; lateral pouches yellow or silvery rose, dotted with black. Outer half of the wing membrane black with indistinct transversal bands, composed of large, sometimes confluent, spots of silvery rose or whitish colour; the margins appearing as minutely fringed with silver. Beneath either whitish yellow or pale sky blue with metallic lustre; the membrane largely, the abdomen in some minutely spotted with black or brown. Iris hazel, with a golden narrow ring. *Young* of the same more vivid colours, with a series of double black spots along the spine of the back, and some scattered on the sides.

Habit.—*Malayan Peninsula, Pinang.*

Philippine Islands, Borneo, Java.

The transcendent beauty of the individually varying colours, baffles description. Such as are current of this and other species, appear to have been taken from preserved specimens. As the lizard lies in shade along the trunk of a tree, its colours at a distance appear like a mixture of brown and grey, and render it scarcely distinguishable from the bark. Thus it remains with no signs of life except the restless eyes, watching passing insects, which, suddenly expanding the wings, it seizes with a sometimes considerable, unerring leap. It is but on close inspection, exposed to the light or in the sun that the matchless brilliancy of its colours appears. But the lizard itself appears to possess no power of changing them. This species is numerous on trees, in valleys and hills. The female, apparently less numerous than the male, car-

ries 3 to 4 eggs of an oval cylindrical shape, $\frac{3}{8}$ of an inch in length, and of a yellowish white colour.—Of a number examined none exceeded the following dimensions :

Lenth of the head, ...	$0\frac{4}{8}$ inch.
Ditto ditto trunk, ...	$2\frac{4}{8}$
Ditto ditto tail, ...	$4\frac{4}{8}$
	$7\frac{4}{8}$ inches.

B.—*Tympanum hidden by scales.* (Dracunculus, *Wiegmann.*)

Draco maculatus, (Gray.)

Syn.—Dracunculus maculatus, Gray.*

Habit.—*Pinang.*

Tenasserim.

Form. This species closely resembles *Draco lineatus*, Daudin, (*Dracunculus lineatus*, Wiegmann,) from which it differs in the following particulars. The adult *male* carries a very elongated, pointed gular pouch, double the length of the head, and a slightly elevated cervical crest, consisting of 6 to 8 pointed tubercular scales, and continued along the anterior half of the back in the shape of a ridge composed of a raised fold of the skin. The *female* has neither cervical crest nor dorsal ridge, and her gular pouch is much reduced, its length being about one half of the length of the head. Both sexes have the following characters in common. From each side of the neck commences a series of spinous scales, sometimes close together on one side, distant on the other, which, increasing in size and becoming more distant, continue along the side of the body, where they deviate outwards, marking the origin of the wings, and again converge towards the root of the tail, where they terminate. The scales of the back are generally smooth, consisting of smaller polygonal, mixed with some larger rhombic, indistinctly keeled, imbricate scales. In some individuals the latter are disposed so as to form a series on each side of the dorsal spine. The supraorbital margin has from 3 to 4 large pointed tubercles, of which but the one situated at the posterior angle appears

* "Grey, black-spotted; wings blackspotted; throat grey; pouch of the male elongate; scales of the back rather unequal, rhombic, keeled; of the sides rather smaller; sides with a series of large keeled scales; ears rather sunk, with unequal flat scales; tail slender, with a central keel above, and 5 more small ones on the sides, base dilated, with 5 nearly equi-distant equal keels above." (*Catalogue of the Specimens of Lizards*, &c. p. 236.)

to be constant. The scales of the neck and throat are small granular, from which those covering the tympanum differ by being larger, flattened and polygonal. The tubercles of the throat and neck, and many of the scales of the back, wing-membranes, and the limbs, have each a minute rounded cavity at the point, discernible by a lens. The pouches, chest and abdomen are covered with rhombic, imbricate, keeled scales without apical cavities. Each jaw has 16 labial scales. The tail is long, very broad at the base, particularly in the male, suddenly tapering, rounded above, and covered with strongly keeled, imbricate, rhombic scales. The first large ones of the lowest series of the root form a more or less conspicuous toothed crest. The lower surface is flattened, with scales like the upper. The apex of the tongue is notched.

Dentition.

Incis. $\frac{4}{2}$, Canin. $\frac{1—1}{1—1}$, Molar, $\frac{15.15}{15.15}$.

Colours. This species bears so close a resemblance to *Draco volans*, that it is scarcely possible to point out any difference. The upper parts of the body are metallic greenish brown, varied with golden rose-colour or isabella, indistinctly dotted and lined with black. The wings are golden isabella with transversal black bands, formed by series of black rounded spots, either separate or confluent on the inner half, but blending into one another on the outer-half. In some individuals numerous undulating golden rose-coloured or buff lines longitudinally intersect the bands. The margins are finely fringed with silver. The limbs and tail are indistinctly ringed with black or brown. A black spot on the vertex, between the eyes, appears to be constant also in this species. The gular pouch and the throat are bright yellow, the latter in some dotted with pale brown. The chest and abdomen whitish yellow in some, bluish white in others. The under surface of the wings is of the latter colour, in some with single large rounded black spots near the margins, independent of the upper markings, which may be distinguished through the hemitransparent membrane.

Of this species but four, of which 2 males were received from Sir Wm. Norris. They were all from the Hills of Pinang;* none exceeded the following dimension :

* The Museum of the Asiatic Society possesses two females, obtained by the late Dr. Spry in the Tenasserim Provinces.

Length of the head,	$0\frac{5}{8}$ inch.
Ditto ditto trunk,	3
Ditto ditto tail,	$5\frac{2}{8}$
	$8\frac{7}{8}$ inches.

The intestinal canal of a female measured :

Small Intestines,	3 inches.
Large ,,	$0\frac{7}{8}$
Cœcum ,,	$0\frac{2}{8}$

The capacious stomach contained remains of insects, particularly of the gigantic black ant, inhabiting the Malayan hill forests. The first portion of Duodenum is much widened till within a quarter of an inch from Pylorus, where Ductus coledochus enters. Cœcum is of a short crescent shape, much widened as well as the large intestine. In the abdominal cavity appeared 5 eggs, of an oval form, yellowish white colour, each half an inch in length.

Gen. Leiolepis, *Cuvier, apud Duméril and Bibron.*

Head sub-pyramidal quadrangular with minute, polygonal, tubercular scales. Tympanic membrane a little sunk. Tongue scaly on the anterior, papillary on the posterior half, apex bifid. Chest with a transversal fold in front. Two canines in each jaw. Trunk sub-cylindrical with granular scales above ; beneath with larger, smooth, imbricate, rectangular scales. Femoral pores. Tail conical, very long ; the root broad and depressed, the rest excessively slender.

To these characters it will be necessary to add : *Skin of the sides of the trunk excessively lax, capable of being expanded into a large wing-like membrane by means of the six anterior, very long, spurious ribs.*

Leiolepis bellii, (Gray.)

Syn.—Uromastix bellii, Gray.
Uromastix belliana, Ill. Ind. Zool.*
Leiolepis guttatus, Cuvier, apud { Guérin. / Duméril and Bibron.
Cynosaurus punctatus, Schlegel.
Leiolepis bellii, Gray : Catal.

* In the supposition that this incorrectly drawn and coloured figure has been taken from the living animal, M. M. Duméril and Bibron have been led to publish an erroneous description and figure. The last description of this species of Mr. Gray appears to be founded on the same authority. It runs thus : " Olive with black edged white spots and a black edged white streak on each side, beneath whitish." *Catal*, &c. p. 263.

Ground-colour, above blackish-grey ; the back and sides with 7 parallel lines of pale sulphur colour, edged with black, the 2nd from below, the 4th and 6th composed of more or less confluent spots, the other 3 of distant round spots. The expanded membrane black with 7 or 8 broad distant, transversal bars of a brilliant orange. The tail above with numerous small pale yellow spots. The forelegs with orange coloured rounded spots, some of which tipped with azure ; the hindlegs minutely spotted with yellow. The throat pale azure ; abdomen pale orange, marbled with broad bluish black veins ; the tail beneath pale yellowish white. The lower eyelid is pure white ; pupil circular, iris hazel with a narrow golden ring.

Habit.—*Malayan Peninsula, Pinang.*

Cochin-China.

The head is covered with small elongated polygonal keeled scales ; the upper jaw with 26, the lower with 18 to 20. The mental shield is elongated, polygonal ; the upper part of the sides is joined to the first lower labial scale ; the centre part is on each side in contact with the first of series of 13 to 15 elongated polygonal scales, which follow the tract of the labial, between which there is a narrow intervening space covered with smooth polygonal scales, larger than those of the rest of the throat. The back and wing-membranes are covered with minute granular scales ; the abdomen with larger smooth rhombic scales. Those of the tail, above and beneath are verticillated, rectangular, subimbricate, and strongly keeled. The tongue is thick, fungous, not scaly as incorrectly represented, with the tip much flattened, free and slightly extensile, divided in two laterally compressed sharp points.—The molar teeth are tricuspidate, increasing in size, the anterior being the smallest. In the adult they are much worn and incrustated with brown tartar, like the teeth of *Semnopitheci* and *Ruminantia*.

Dentition.

Incis. $\frac{4}{1—1}$, Canin. $\frac{1—1}{1—1}$, Molar. $\frac{12.12}{11.11}$.

The nails are long, slightly arched, of a pale yellowish horn-colour.

The wing-membrane in a state of repose appears like a longitudinal loose fold, extending along each side from the axilla to the inguinal region. Expanded the external margin becomes arched, the trunk and the membranes forming a greatly flattened oval disk, (strongly contrasting

with the bulky appearance of the parts in a state of repose,) resembling the hood of *Naja*. The transversal diameter of the disk across axilla and the inguinal region is $1\frac{1}{8}$ inch; across the centre $2\frac{2}{8}$ inches. Like the mechanism of the Genus *Draco*, the membranes are expanded by means of the very long six anterior pairs of spurious ribs, which the lizard has the power of moving forward under a right angle with the vertebral column. The six posterior ones are excessively short, and though equally moveable, do not appear materially to assist in expanding the membranes. The latter are used as a parachute in leaping from branch to branch, after which they immediately resume their state of repose. Sudden fear, or anger will also cause a momentary expansion. The femoral pores are situated on a series of rather large rhombic scales on each thigh. In a number of twelve adult individuals, the pores varied from 13 to 19 on each thigh. In the specimens in the Paris Museum, described by M. M. Duméril and Bibron, there are from 20 to 24 on each thigh.

This species appears to be numerous, but local. Twelve were at one time obtained from a spice plantation in province Wellesley, some of which were in the act of changing the integuments. They were very active and swift, more so than their rather heavy make would induce to believe, and they would bite and scratch when handled, although among themselves in a spacious cage, they appeared peaceable, and patiently submitted to being trodden, or run over by a neighbour, about ascending the perch. The Malay, who brought the lizards, asserted they were frugivorous, and might be fed with soft fruit and boiled rice, which was perfectly true. In one immediately examined, the stomach and intestines contained rounded seeds of various kinds from the smallest size to that of a large pea, and vegetable fibres.*

The rest refused insects and different kinds of fruit, but during the several months' confinement each would daily eat a little boiled rice, and occasionally take water. Of these none exceeded the following dimensions:

Length of the head,.....	0	ft.	$1\frac{1}{8}$ inch.
Ditto ditto trunk,.....	0		$4\frac{2}{8}$
Ditto ditto tail,.....	1		0
Entire length,	1	foot	$5\frac{3}{8}$ inch.

* The latter, however, as well as sand and fragments of stones, also occur in carnivorous and insectivorous lizards, as well as serpents, which swallow these substances to stimulate digestion.

Length of the intestinal canal:

Small intestines,	$5\frac{6}{8}$ inch.
Large ditto	3
Cœcum,	$0\frac{2}{8}$

The stomach is of a lengthened pyriform shape, one inch in length; Duodenum, narrow, receives Ductus coleductus at $\frac{3}{8}$ inch distance from Pylorus.—Cœcum is very short, nearly circular. The large intestine is sacculated, terminating in a short simple rectum.

There seems to be reason to believe that *Leiolepis revesii*,* Gray, inhabiting "China" and Arracan, is also found on the Malayan Peninsula.

FAM. SCINCIDÆ, *Gray*, (LEPIDOSAURES, *Duméril and Bibron.*)

Sub. Fam. Saurophthalminæ, *Cocteau.*

Gen. Gongylus, *Wagler, apud Duméril and Bibron.*

Nostrils lateral, pierced either through the nasal, or between the nasal and rostral shield; tongue notched, squamous; teeth conical, often slightly compressed, and as it were wedge-shaped, simple; palate toothed or not, with a posterior notch or a longitudinal groove; auricu-

* Syn. *Uromastix revesii*, Gray.—"*Olive with a series of bright red spots on each side.*" (Griffith: Animal Kingdom, IX. p. 62.) Such was the only account of this species at the time of the publication of *Erpétologie Générale*, where it is not introduced. Mr. Gray's latest description runs thus: "*Olive with longitudinal series of pale whitish spots; when alive blackish, with orange spots on the back, and a series of bright red spots on the sides.—China.*" (Catalogue, &c. p. 263.)

The Museum of the Asiatic Society possesses an adult male and a young specimen, sent from Arracan by Capt. Phayre. The form resembles in every particular that of *Leiolepis guttatus*, from which the present species principally differs by its colours, larger, heavier make and size. Each jaw is covered by 20 scales. From the mental scale proceeds a series of 10 larger scales on each side below the labial. On the throat appear 2 or 3 strong transversal folds, of which the anterior commences from the posterior margin of the tympanum, The tail is covered with keeled verticillate scales as in *L. guttatus*, but not with "rings of smooth scales" as Mr. Gray's generic character states.

Dentition.—Incis. $\frac{4}{1-1}$, Canin. $\frac{1-1}{1-1}$, Molar. $\frac{10.10}{10.10}$, Femoral pores 20.

Length of the head,	0 feet	$1\frac{4}{8}$ inch.
Ditto ditto trunk,	0	$6\frac{1}{8}$
Ditto ditto tail,	1	0
Entire length,	1	$7\frac{5}{8}$ inch.

lar apertures; four feet, each with 5 unequal, slightly compressed, not dentilated, nailed toes; sides rounded; tail conical or slightly compressed, pointed.

Sub-Gen. Eumeces, *Wiegmann.*

Nostrils pierced through the nasal shield, near the posterior margin; 2 supernasal shields; palate not toothed, with a rather shallow triangular notch behind; scales smooth.

Eumeces punctatus, (Linné,) Var.

Syn.—Lacerta punctata, Linné.
Stellio punctatus, Laurenti.
La Double raie, Daub., apud Lacép, Bonnat.
Lacerta interpunctata, Gmelin, apud { Donnd. / Shaw. / Latreille.
Scincus bilineatus, Daudin.
Scincus punctatus, Schneider, apud Merrem.
Seps scincoïdes, Cuv. apud Griffith, A. K.
Lygosoma punctata, Gray, apud Griff. A. K.
Riopa punctata, Gray.
Tiliqua cuvierii, Cocteau.
Tiliqua duvaucellii, Cocteau.
Eumeces punctatus, Wiegmann, apud Dum. and Bibr.
Riopa hardwickii, Gray: Catal, (Young.)

Trunk individually varying in length; limbs very small, giving the lizard a blindworm-like appearance; tail very thick at the root, fusiform, tapering to a very sharp point, its length varying from one to two-thirds of the entire length of the animal. On the anterior margin of the ear a small tubercle. Above metallic chestnut, or greenish bronce, in some with 6 more or less distinct, dotted, black lines along the back, or with the two rows of scales nearest each side of a lighter shade than the ground colour, thus forming two lighter longitudinal bands. From the nostril to the middle of the side of the tail a black or brown band, with numerous small white spots on the sides. Limbs outside dotted with white. Beneath sulphur-coloured, in some the throat and tail minutely dotted with black. Iris dark brown, with a narrow, circular, golden ring.

Habit.—*Malayan Peninsula, Pinang, Singapore.*
Malabar and Coromandel Coast, Bengal.

The Variety described above, is numerous in the Malayan countries, both on hills and in valleys. Of several the largest individual was of the following dimensions :

Length of the head, ...	$0\frac{3}{8}$ inch.
Ditto ditto trunk, ...	$2\frac{1}{8}$
Ditto ditto tail, ...	$1\frac{7}{8}$
Entire length,	$4\frac{3}{8}$ inches.

Sub. Gen. Euprepis, *Wagler.*

Nostrils pierced through the posterior part of the nasal shield ; two super-nasals ; palate with a more or less deep triangular incision ; pterygoid teeth ; scales keeled.

Euprepis rufescens, (Shaw.)

Syn.—Lacerta maritima maxima, &c. Seba II, Tab. 105, Fig 3.
Lacerta rufescens, Shaw, III, P. 1, P. 285.
Scincus rufescens, Merrem, apud { Cuvier. / Gray in Griffith, A. K.
Scincus multifasciatus, Kuhl.
Mabouya multifasciata, Fitzinger.
Euprepis multifasciatus, Wagler.
Tiliqua fufescens, Gray.
Eumeces rufescens, Wiegmann.
Tiliqua carinata, Gray.
Tiliqua affinis, Gray, (Young.)
Euprepes sebæ, Duméril et Bibron.

Body strong ; limbs proportionate ; tail rounded, slightly compressed, little exceeding half the entire length. Scales of the back and sides : in the young with 5 to 7 keels ; in the adult the dorsal scales with 3 to 5 keels, the rest smooth. The anterior margin of the ear with 3 or 4 minute lobules. Lower eyelid with a series of 4 or 5 larger, square scales. Pterygoid teeth minute, few, hid in the palatal membrane, forming a short line on each side of the triangular incision of the palate.

Habit.—Sandwich-Islands, Philippines, Timor, Celebes, Borneo, Java, Coromandel, Bengal.

Var. D., Duméril and Bibron.

Above. Ground colour shining bronce with 5 to 7 zigzag, or dotted black lines, in some continued on the tail ; sides with many of the scales black, with a square white spot in the middle, in some arranged so as

to produce numerous, distant, transversal bands. The margins of some or all the shields of the head black. Beneath sulphur-coloured. Iris black with a golden circular ring.

Habit.—*Malayan Peninsula, Pinang, Singapore.*

Var. E., Duméril and Bibron.

Above uniformly shining bronze; sides in some sprinkled with blood red; rest like the preceding.

Habit.—*Same localities.*

Var. F., Duméril and Bibron.

Above uniformly shining bronze; the anterior half of the sides with a broad blood-red stripe, which in specimens preserved in spirits of wine changes to whitish, or disappears; the posterior part of the sides of the body and the anterior of the tail in some with square sky-blue spots in the middle of some of the scales; rest like the preceding.

Habit.—*Same localities.*

These three varieties are exceedingly numerous in the hills and valleys of the Malayan countries. They may be seen basking in the sun, in bamboo hedges, or on trees, and they fearlessly enter houses in pursuit of insects, in which they display great agility. The female deposits 6 to 12 yellow white, oval, cylindrical eggs, half an inch in length. Nearly all have on the lower two-thirds of the tail a series of large scuta. In one individual observed the last two-thirds of the back of the tail was covered with a single series of very broad scales, of which each of the anterior had 15 to 16 keels. In another the tail had been lost near the root, and reproduced by a pyramidal, soft, naked process, $\frac{3}{8}$ inch long, with circular folds like those of the body of *Ichthyophis*.—*Var. F.* appears to exceed the others in size: the largest was of the following dimensions:

Length of the head, ...	$0\frac{5}{8}$ inch.
Ditto ditto trunk, ...	$3\frac{4}{8}$
Ditto ditto tail, ...	$4\frac{4}{8}$
Entire length:	$8\frac{5}{8}$ inch.

Euprepis ernestii, Duméril and Bibron.

Syn.—Scincus ernestii, Boie, MSS.
Psammite de Van Ernest, Coctean.
Dasia olivacea, Gray: Catal.

Form like *E. rufescens*. Triangular incision of the palate very small, with a few minute pterygoid teeth on each side. Ears obliquely oval, small, appearing more so being half covered by two of the temporal scales; no lobules on the anterior margin. Scales of the back with minute, longitudinally waved lines, and from 3 to 8 indistinct keels. The outer half of the toes and the nails sharply compressed. A series of scuta beneath the tail.

Very young. Head light green bronze, shields edged with black and a black line, edged with silver, from the muzzle to the ear. Back, sides, root of the tail and outside of the limbs shining black with numerous transversal, waved, silvery lines. Feet and toes rose, or flesh-coloured. Tail brilliant scarlet.* Throat, abdomen and inside of the limbs silvery white.

Adult. Ground colour greyish-brown bronze. Frontal and supra-orbital shields black edged; fronto-parietals, inter-parietals and parietals black, each with a whitish elongated mark, united, forming a symmetrical figure. From the nostril to the eye a black streak. Neck and body with a number (12 to 14,) of distant, transversal, waved bands, composed of black scales, each with a rectangular white spot in the middle. Outside of limbs with 4 or 5 similar bands. In some a buff coloured lateral band on the posterior part of the back, and the anterior half of the side of the tail. Beneath iridescent light bluish-green; scales with whitish edges. Iris black with a golden narrow circle.

Habit.—*Malayan Peninsula, Pinang.*

Java.

In habits this species resembles *Euprepis rufescens*, but appears to be far less numerous. In a female were found eleven eggs, in shape, size and colours resembling those of *E. rufescens*. The young, above described, was of the following dimensions:

Length of the head, ...	$0\frac{3}{8}$ inch.
Ditto ditto trunk, ...	1
Ditto ditto tail, ...	$1\frac{6}{8}$
Entire length:	$3\frac{1}{8}$ inch.

* The very young of *Eumeces lessonii*, Dum. and Bibr. (*Scincus cyanurus, Lesson,*) is distinguished by a similar distribution of colours.

Of the two adult individuals the large measured :

Length of the head, ...	$0\frac{6}{8}$ inch.
Ditto ditto trunk, ...	$3\frac{2}{8}$
Ditto ditto tail, ...	$4\frac{4}{8}$
Entire length :	$8\frac{4}{8}$ inches.

Sub-Gen. Lygosoma, *Gray, apud Dum. and Bibr.*

Nostrils pierced through the nasal shield ; no supranasals ; palate toothless, with a small triangular incision, situated far back ; scales smooth.

Lygosoma chalcides, (Linné.)

Syn.—Scincus pedibus brevissimis, &c. Gronov. P. II, No. 43.
Lacerta chalcides, Linné.
Angvis quadrupes, Linné, apud Hermann.
Le Chalcide, Daubenton.
Der Vierfuss, Müller.
Lézard vert à ecailles lisses, Vosmaer.
Lacerta serpens, Bloch, apud { Hermann. Gmelin. Leske. Donnd. Shaw.
Angvis quadrupède, Lacépède.
Chalcida serpens, Meyer.
Lacerta serpens, Donnd, apud Shaw.
Scincus brachypus, Schneid. apud Merrem.
Chalcides serpens, Latreille.
Seps pentadactylus, Daudin.
Seps (Angvis quadrupes, Lin.) Cuv., apud Griffith, A. K.
Mabouya serpens, Fitzinger?
Lygosoma serpens, Gray, apud { Wagler. Griffith, A. K.
Lygosoma aurata, Gray, apud Griffith, A. K.
Tiliqua de Vosmaer, Cocteau.
Lygosoma brachypoda, Duméril and Bibron.
Podophis chalcides, Gray : Catal.

Blindworm-like ; limbs excessively small ; tail strong, conical, about two-fifth of the entire length. A single large lozenge-shaped fronto-parietal shield. Ear minute, circular. Lower eyelid scaly, with a few larger scales. Preanal scales larger than the rest.

Ground colour : iridescent lighter or darker copper, or bronze, in some with indistinct dark brown zigzag lines, produced by the scales being laterally edged or dotted with that colour. Beneath pale or whitish yellow. The tail in some minutely dotted with brown. Iris black with a minute golden ring. The supraorbital scales being somewhat transparent, the black colour of the eye gives them a blackish appearance.

Habit.—*Pinang.*

Singapore, Java.

But two individuals were observed on the Great Hill of Pinang, one by Sir W. Norris, the other by myself. The latter made its appearance through a hole in the soft, moist mould beneath a group of *Polypodium horsfieldii*. Above ground its movements were very quick, serpent-like, apparently little assisted by the tiny limbs. The head of the larger measured $\frac{2}{8}$ inch, the trunk $2\frac{7}{8}$ inches in length. One had but 4 toes on the anterior feet. In both the tail was reproduced, which is also the case in a third, from Singapore, preserved in the Museum of the Asiatic Society.

OPHIDIA.

INNOCUOUS SERPENTS.

FAM. TYPHLOPIDÆ, Gray.

BURROWING.

Gen. Pilidion, *Duméril and Bibron.*

Head covered with shields, cylindrical, very short, as if truncated, convex above, declivous in front; muzzle rounded; rostral shield like a large rounded cap covering the head and muzzle; an anterior frontal, a frontal, a pair of supra-orbital-, ocular-, nasal-, and fronto-nasal shields; neither parietals, inter-parietals, nor præ-orbitals; nostrils hemispherical, under the muzzle, between the nasal-and fronto-nasal shields; eyes excessively small, hidden by the ocular shields.

Pilidion lineatum, (Boie.)

Syn.—Acontias lineatus, Reinwardt, MS.
Typhlops lineatus, H. Boie.
Typhlina, Wagler.
Typhlops lineatus, Gray in Griffith, A. K.
Typhlops lineatus, Schlegel.
Pilidion lineatum, Duméril and Bibron.
Typhlinalis lineatum, Gray: Catal.

Ground-colour pale gamboge or orange, uniform on the head, the apical third of the tail, and the abdomen; interrupted on the back and sides by 12 longitudinal, serrated brown lines, produced by a minute triangular spot on each side of the scales.

Habit.—*Pinang Hills.*

Java, Sumatra, Singapore.

A single individual, captured by Sir William Norris, differs from the description given by M. M. Duméril and Bibron in the comparatively greater dimensions of the tail. It is strongly arched; its length equals twice the breadth of the head; it is covered with 16 transversal series of scales, and it is considerably thicker than the rest of the uniformly cylindrical body. The anterior frontal shield is very broad, larger than the frontal. It was of the following dimensions:—

Length of the head, ...	0 feet	$0\frac{2}{8}$ inch.
Ditto ditto trunk, ...	1	$0\frac{7}{8}$
Ditto ditto tail, ...	0	$0\frac{4}{8}$
	1 ft.	$1\frac{5}{8}$ inch.

Circumference of the trunk $\frac{5}{8}$ inch; of the tail $\frac{6}{8}$ inch.

GEN. TYPHLOPS, *Schneider.*

Head covered with shields, depressed; muzzle rounded, covered above and beneath by the rostral shield; an anterior frontal, a frontal, a pair of supra-orbitals, one or two pairs of parietals and inter-parietals; a pair of nasals, fronto-nasals, præ-orbitals and oculars; nostrils lateral, hemispherical, opening in the suture between the nasal and fronto-nasal; eyes lateral, more or less distinct; pupil round.

TYPHLOPS NIGRO-ALBUS, Duméril and Bibron.

SYN.—Argyrophis bicolor, Gray: Catal.

Shining black above; on the head some transversal and radiating whitish yellow lines; scales of the back edged with white; beneath whitish yellow.

HABIT.—*Pinang Hills, Singapore.*

Sumatra.

This species is closely allied to *T. diardi,* Schlegel,* an inhabitant of Assam and the Khassia Hills. Of two individuals observed, the larger was of the following dimensions.

Length of the head, ...	0 feet	$0\frac{4}{8}$ inch.
Ditto ditto trunk, ...	1	0
Ditto ditto tail, ...	0	$0\frac{3}{8}$
	1ft.	$0\frac{7}{8}$ inch.

Circumference of the trunk $\frac{7}{8}$ inch, of the tail $1\frac{1}{8}$ inch.

* SYN.—*T. diardii,* apud Dum. and Bibr.—*Argyrophis horsfieldii,* Gray: Catal.

Typhlops braminus, (Daudin.)

Syn.—L'Orvet lombric, Lacépède.
Anguis. Rondoo Talooloo Pam. Russell, I. Pl. 43.
Punctulated Slow-Worm, Shaw.
Eryx braminus, Daudin.
Typhlops rondoo talooloo, Cuvier.
Tortrix russelii, Merrem.
Typhlops braminus, apud { Cuvier. / Fitzinger. / Gray in Griffith, A. K.
Typhlops russellii, Schlegel.
Typhlops braminus, Cuvier, apud Duméril and Bibron.
Argyrophis bramicus, Gray : Catal.

Shining copper-coloured, or brown of various shades above, paler beneath. Some individuals of a uniformly bluish white. All the scales with a dark brown spot at the anterior part. The shields of the head have a whitish line close to their margins. In the young the latter is crenulated, and the sides of the head, lips, throat, the anal region, and the point of the tail are yellowish or whitish, and the body is semitransparent.

Habit.—*Pinang, Singapore, Malayan Peninsula.*
Canton-Province, Philippines, Guam (Marian Isles,) Java, Tenasserim, Bengal, Assam, Coromandel, Ceylon, Malabar.

In the Malayan countries this species is numerous in hills and valleys. The eyes are black, the pupil round, which is also the case in *T. nigro-albus*. The largest of a great number examined was of the following dimensions :—

Length of the head, ...	$0\frac{3}{8}$	inch.
Ditto ditto trunk, ...	$7\frac{2}{8}$	
Ditto ditto tail, ...	$0\frac{1}{8}$	
	$7\frac{6}{8}$	inch.

Circumference of the neck $\frac{4}{8}$ inch ; of the tail $\frac{5}{8}$ inch.

The preceding species of this family are all of similar habits. They mostly live under ground, but appear occasionally in shady places, particularly after showers of rain, in Bengal, in the rainy season. They are very agile, and appear to make use of the horny point of the tail as a propeller. When taken, they frequently press it against the hand in their attempts to escape. Reposing on the ground *Typhlops bra-*

minus may easily be mistaken for an earthworm, until its serpentine movements, the darting of the white furcated tongue, while the head and neck are raised, make it known. In confinement they refuse food and water. In all dissected, the stomach contained some earth; in a few, remains of insects, (myriapoda, ants.) A young female had a string of six cylindrical soft eggs, of a yellowish white colour, each about $\frac{2}{8}$ of an inch in length, $\frac{1}{16}$ in diameter.

FAM. BOIDÆ, Bonaparte.

BURROWING.

Gen. Cylindrophis, *Wagler.*

Scales smooth, imbricate, hexagonal; those of the abdomen broader than the rest; nostrils subvertical, opening in the lower part of the anterior frontal shield; neither nasals, frenals, nor præ-orbitals; a single post-orbital; frontals large, reaching the minute eye, and the large 2nd and 3rd labials; supra-orbitals, occipitals and vertical distinct; tail very short.

Cylindrophis rufus, (Laurenti)

Syn.—Anguis rufa, Laurenti, apud { Gmelin. Schneider. Shaw.
Anguis striatus, Gmelin.
Anguis scytale, Linné, apud Russell, II. Pl. 27.
Shilay Pamboo, Russell, II. Pl. 28 (young.)
Anguis corallina, Shaw.
Eryx rufa, Daudin.
Tortrix rufa, Merrem, apud { Gray. Schinz. Schlegel. Filippi.
Scytale scheuchzeri, Merrem.
Ilysia rufa, Lichtenstein, apud Fitzinger.
Cylindrophis resplendens, Wagler.
Cylindrophis rufa, Gray, apud Duméril and Bibron.

Iridescent blackish brown above, beneath with alternate black and yellowish white transversal bands or interrupted bars. Iris black, pupil vertically contracted by the light; tongue whitish. Central series of abdominal scales 206; subcaudal 6.

Habit.—*Singapore.*

Java, Tranquebar, Bengal. (?)

A single individual, turned up with the earth in a garden at Singapore belonging to Dr. Montgomerie, differs from the description

given by M. M. Duméril and Bibron in the following particulars. The head is uniformly black, without the two scarlet frontal spots; the apex of the tail whitish; the posterior part of the body is more robust than the anterior; the length of the head forms more than $\frac{1}{38}$ of the entire length of the animal; there are six pairs of labial shields on each jaw, and the scales of the trunk are disposed in 20 longitudinal series. It unites characters assigned by M. M. Duméril and Bibron as distinguishing *Cylindrophis rufus* from *C. melanotus*, Wagler, and it would therefore appear that Dr. Schlegel is justified in considering the latter from Celebes (*Tortrix melanota*, Boie, MS.) as a variety of *rufa*. In the present individual there is no external appearance of the very rudimentary anal hooks. It was slow in its movements, attempted to escape, but not to bite.

Length of the head, ...	0 feet	$0\frac{4}{8}$ inch.
Ditto ditto trunk, ...	1	$6\frac{2}{8}$
Ditto ditto tail, ...	0	$0\frac{3}{8}$
	1 ft.	$7\frac{1}{8}$ inch.

Gen. Xenopeltis, *Reinwardt.*

Head rather narrower than the trunk, depressed, obsoletely angular; eyes small, round; nostrils large, apical; frenal shield very large; præ-orbital none;* post-orbitals three;† interparietal very large, equalling the vertical; trunk thick, short with imbricate smooth hexagonal scales, disposed in longitudinal series, increasing in size towards the narrow abdominal scuta; tail thick, short, awl-shaped, beneath with scutella.

Xenopeltis unicolor, Reinwardt.

Syn.—Xenopeltis concolor, Reinwardt.
Xenopeltis leucocephala, Reinwardt (young.)
Guerin: Iconog. Pl. 21, Fig. 3.
Tortrix xenopeltis, Schlegel.

Adult.—Blackish or reddish brown above with strong metallic blue, purple, and green lustre; lips and throat buff; the lowest lateral series

* The single præ-orbital is very large, the frenal small, sub-rectangular; the nostrils open between the latter and the nasal shield.

† Three individuals examined, presented two post-orbitals.

of scales, scuta and scutella pale reddish brown with broad whitish margins. Iris black ; pupil lanceolate with the apex downwards, vertically contracted by the light ; tongue buff.

Young.—Head yellowish white with a brown spot on the crown and labial shields ; the scales of the sides edged with white, producing longitudinal zig-zag lines ; the two lowest series of scales and scuta yellowish white ; scutella of the same colour with a brown transversal line.

Scuta 175 to 179, Scutella 26 to 27.

Habit.—*Pinang, Singapore, Malayan Peninsula.*

Celebes, Java, Sumatra.

Of three young individuals, one was found by Sir William Norris on the Great Hill at Pinang, a second by Dr. Montgomerie at Singapore, and a third was obtained in Province Wellesley, where also a single adult male was killed. As this serpent in general appearance bears a strong resemblance to *Lycodon aulicus*, (Linné) (Syn. *L. hebe*, apud Schlegel), so it also does in its fierce habits, and mode of attack. The scales are smooth, rhombic-hexagonal, disposed in 15 longitudinal series. Labial shields $\frac{8}{8}$-$\frac{8}{8}$. The stomach of a young individual examined, contained the remains of a rat. The adult attains to a much larger size than supposed : a male was of the following dimensions :

Length of the head,.....	0 feet.	$1\frac{4}{8}$	inch.
Ditto ditto trunk,.....	3	$2\frac{3}{8}$	
Ditto ditto tail, ...	0	4	
	3 ft.	$7\frac{7}{8}$	inch.

Circumfernce of the neck $2\frac{6}{8}$, of the trunk $1\frac{2}{8}$, of the root of the tail 2 inch.

TERRESTRIAL.

Gen. Python, *Daudin.*

Entire shields under the abdomen and tail, the latter cylindrical, sometimes with scutella ; anus with scales and a hook on each side.

Python reticulatus, (Schneider.)

Syn.—Seba I, Tab. 62, Fig. 2 ; II. Tab. 79, Fig. 1. and Tab. 80. Fig. 1.
Ular sawa, Wurmb.
La jaune èt bleue Laeépède.
L'oularsawa, Bonnaterre.
Boa reticulata, Schneider, apud Daudin.
Boa rhombeata, Schneider. (?)

Boa amethystina, Schneider.
Boa constrictor, Var e, Latreille.
Boa phrygia ; Shaw.
Coluber javanicus, Shaw.
Boa constrictor, Var 5, Daudin.
Python amethystinus, Daudin.
Python des îsles de la Sonde.
Python schneiderii, Merrem, apud { F. Boie. / Guerin. / Schlegel.
Coluber javanensis, Fleming.
Python javanicus,* Kuhl, apud { Fitzinger. / Gray in Griffith, A. K. / Eichwald.
Constrictor (P. schneideri, Khul) Wagler.
Python reticulatus, Gray, apud Duméril and Bibron.
"Ular sawa" of the Malays.

Ground-colour above light yellowish-brown, chestnut or olive-green, assuming a greyish hue on the sides, all the colours strongly iridescent, particularly reflecting metallic blue, or green. The head is divided from the muzzle to the nape of the neck by a black line, continued along the back to the point of the tail and describing a series of large lozenges, sometimes linked to each other by a small black ring, sometimes broken up into large irregular patches. A black oblique line proceeds from behind the eye towards the angle of the mouth, continuing on the sides as a series of more or less regular lozenges, which are joined to the lateral angles of those of the back by a large black triangular spot with a white arched mark in the centre. The scales nearest the black margins of the lozenges are of a lighter colour than the rest, sometimes whitish. Between and within the lateral lozenges appear numerous black spots, or interrupted lines. The lips (the lower in some present a black line), and abdominal scuta are gamboge, or pale yellow, as well as the lowest two or three series of scales, but the latter with irregular black spots. The caudal scutella, and scuta, when present, are yellow, marbled with black. The iris is silvery flesh-coloured or yellowish-brown, sometimes with a black bar; the pupil vertically contracted by the light. The tongue is black above, bluish white beneath. In the young the colours are brighter than in the adult.

Scuta 297 to 330 ; Scutella 82 to 102.

* *Pytho javanicus*, figured and described in *Abel's Narrative*, &c., is *Python molurus*, (Linné.)

Habit.—*Malayan Peninsula and Islands.*
Chusan ?* Amboina, Java, Banka, Sumatra, Bengal ! ☞

The two fossets of the rostral shield are pyriform with the apex diverging, and those of the nearest 3 or 4 upper labials are of similar shape. The inferior fossets are square, occupying the lower margin of the shield, varying from 7 to 9 on each side. The foremost of these is situated on the shield corresponding to that of the upper jaw, which borders the orbit.

This species is very numerous in the Malayan hills and valleys, feeding upon quadrupeds and birds. It often takes up its abode in outhouses, preying at night, and is thus useful in destroying vermin, although plunder is occasionally committed in poultry yards. Dr. Montgomerie has seen in George Town, Pinang, a young one which the inhabitants suffered to retain unmolested possession of the rice stores in order to secure them against the ravages of rats. Individuals of 16 ft. in length are of no rare occurrence. In 1844 one was killed at the foot of Pinang, which a gentleman informed me measured more than 30ft. During the expedition to China in 1840 one was shot from the poop of one of H. M. Transports, then riding in Singapore roads, between 3 and 4 miles from the shore. It was about 9ft. long, and had the upper part of the head infested with *Ixodes ophiophilus*, Müller. The Chinese attribute great medicinal qualities to the heart and the gall-bladder, and use the skin to cover the bodies of some of their musical instruments. *Python molurus*, (Linné,) *Pedda Poda*, Russell, I. Pl. 22, 23, 24, and *Bora*, Pl. 39, is said also to occur, but rarely, in the Malayan Peninsula, but I never had an opportunity of seeing it.

* Skins are of frequent occurrence at Chusan, and the natives assert that the serpent is found there and on the neighbouring continent. Serpents from 14 to 16 feet in length, "Rock-snakes," were observed by several officers during our occupation of the island.

☞ M. M. Duméril and Bibron state that this species has been sent from Bengal by M. A. Duvaucel. The natives are not acquainted with it, and the specimens in the Museum of the Asiatic Society are from Pinang. The living animal is occasionally brought from the Straits of Malacca to Calcutta, and such is probably the history of the specimen sent from Bengal by M. Duvaucel. *Python molurus*, (Linné,) (*Pedda Poda* and *Bora* of Russell,) is very numerous in Bengal.

AQUATIC.

Gen. Acrochordus, *apud Schlegel.*

(*Acrochordus*, Hornstedt, 1787.—*Chersydrus*, Cuvier, 1817.)

Acrochordus, Hornstedt. Nostrils vertical, eyes encircled by a ring of minute scales; trunk compressed, attenuated towards both extremities; tail tapering, compressed; all the scales small, trifid, strongly keeled.

Acrochordus javanicus, Hornstedt.

Syn.—Acrochordus javanicus, apud Shaw.
Acrochordus javensis, Lacép. apud Cuvier.
Acrochordus javanicus, apud Schlegel.
"U'lar károng, or sápi, or lembu" of the Malays.*

Young. Above dull greyish-brown; sides and lower parts pale yellow, or dirty ochre; back with 3 longitudinal, undulating, frequently interrupted black bands; sides and abdomen with rows of rounded spots, marbled and dotted with black.

Adult. Of similar, but less distinct colours. Iris brown, pupil elliptic, vertically contracted by the light; tongue whitish.

Habit.—*Pinang, Singapore.*

Java.

A female captured on the Great Hill at Pinang, at a distance from water, was of the following dimensions:

Length of the head, ...	0 ft.	$1\frac{4}{8}$	inch.
Ditto ditto trunk, ...	4	7	
Ditto ditto tail, ...	0	9	
	5ft.	$5\frac{4}{8}$	inch.

Greatest circumference one foot.

Notwithstanding the sharply compressed abdomen, the serpent moved without difficulty, but sluggishly on the ground, and preferred quiet. When touched she attempted to bite, but the pupil being contracted by the glare, she missed her aim. Shortly after being brought, while the rest of the body remained motionless, the posterior ribs were observed moving, and the serpent successively, in the course of about 25 minutes, brought forth twenty-seven young ones. Each birth was

* *U'lar* signifies a serpent, *károng* a sac; *sápi* and *lembu* a cow or ox. These expressive vernacular names refer to the loose skin, and the bulk of the animal.

followed by some sanguinolent serum. With two exceptions the fœtus appeared with the head foremost. They were very active, bit fiercely, and their teeth were fully developed. Shortly after birth the integuments came off in large pieces, which is also the case with the fœtus of several species of *Homalopsis*. The present ones were placed in water, which however appeared to distress them, as they all attempted to escape on dry ground. Nearly all were of the following dimensions :

Length of the head, ...	0 ft.	$0\frac{6}{8}$	inch.
Ditto ditto trunk, ...	1	$1\frac{2}{8}$	
Ditto ditto tail, ...	0	3	
	1ft.	5	inch.

The Malays of Pinang assert that this species is of very rare occurrence. During a residence of 20 years at Singapore, Dr. Montgomerie observed it but in a solitary instance. The physiognomy of this species bears a striking resemblance to that of a thorough-bred Bull-dog, which in a somewhat less degree also may be said of the following.

*Sub-Gen. Chersydrus,** Cuvier. Head and body uniformly covered small scales.

ACROCHORDUS GRANULATUS, (Schneider.)

SYN.—Hydrus granulatus, Schneider.
Angvis granulatus, Schneider.
Acrochordus fasciatus, Shaw.
Acrochordus dubius, Shaw.
Pelamis granulatus, Daudin.
Chersydrus (A. fasciatus, Shaw), Cuvier.
Acrochordus fasciatus, apud Raffles.
Chersydrus granulatus, Merrem, apud Wagler.
Acrochordus fasciatus, apud Schlegel.
" U'lar limpa," ☞ or " U'lar laut" of the Malays.

Young. Blackish-brown or liver-coloured ; the head with a few scattered yellowish-white spots, the rest of the body with numerous rings of the latter colour, some interrupted on the back, others on the abdomen.

* This Sub-Gen. was founded upon the erroneous supposition that *Acrochordus fasciatus*, Shaw, possessed venomous organs.

☞ *Limpa*, i. e. liver, liver-coloured.

Adult. The dark colours fade to a dull greyish black, uniform on the back, and the sides and abdomen present alternate dark and whitish vertical bands. Iris black, pupil vertically contracted; tongue whitish.

Habit.—*Rivers and sea-coast of the Malayan Peninsula and Islands.* Bay of Manilla, New-Guinea, Timor, Java, Sumatra, Coromandel.

This species appears not to exceed about 3ft. in length. The body is less bulky and the skin less loose than in *A. javanicus*. But the form is more compressed, particularly the sword, or oar-like tail, and like that of the pelagic venomous serpent, appears exclusively calculated to aquatic habits. The scales also resemble those of the latter, and are generally smaller than in *A. javanicus*. Those of the back, the largest, are rounded rhombic, each with a minute tubercle in the centre. The skin in the interstices is finely wrinkled. On the abdomen the scales are mucronate, with a sharp, reclining central point. In both species the medial line is raised by 2 or 3 quincunx rows of scales with their points overlapping each other. The orbit is surrounded by a ring of scales a little larger than the rest. The nostrils, pierced high up on the muzzle, are almost vertical, slightly more so than they are in *A. javanicus*. In both they are tubular, larger in the present species, sinuous, and provided with a deeply seated membranous fold, which can hermetically close the passage. The mouth is secured in a similar manner by a central arched notch and two lateral protuberances, which correspond to a protuberance and two lateral cavities in the lower jaw. This contrivance also occurs in *Hydrus*, and to a certain extent in *Homalopsis*. With the exception of the dentition and the absence of venomous organs, in anatomical details both species of *Acrochordus* closely resemble *Hydrus*. As observed by M. Schlegel, the most striking feature is the great development of the lung, which occupies nearly three-fourths of the extent of the abdominal cavity. A somewhat similar arrangement also occurs in *Homalopsis*. All the maxillary teeth (inter-maxillary none) are strong, pointed, inwardly reclining and disposed in double or treble rows. The 3 anterior teeth are the shortest: the upper jaw has on each side upwards of 20 teeth, the lower 3 or 4 less. The palatal teeth number 12 on each side, the pterygoid 9, and are shorter than the rest. *Acrochordus granulatus* is of no rare

occurrence in the sea of the Malayan coasts, although, according to Raffles, it is rarely seen on the coasts of Sumatra. At Pinang they are found among the fishes, taken in the stakes some 3 or 4 miles distant from the coast. M. Schlegel is mistaken in stating that this species never inhabits the sea,* and in censuring M. Eschscholtz for his stating that the fishermen often take it in the Bay of Manilla. A female of the following dimensions had six eggs:—

Length of the head, ...	0 feet	$0\frac{6}{8}$ inch.
Ditto ditto trunk, ...	2	$7\frac{2}{8}$
Ditto ditto tail, ...	0	$3\frac{6}{8}$
	2 ft.	$11\frac{6}{8}$ inch.

Greatest circumference, 4 inches.

The egg is cylindrical, soft, coriaceous, whitish, about $1\frac{1}{2}$ inch in length. In each egg was coiled up a living young one of the following dimensions:

Length of the head, ...	$0\frac{3}{8}$ inch.
Ditto ditto trunk, ...	9
Ditto ditto tail, ...	$1\frac{4}{8}$
	$10\frac{7}{8}$ inch.

Greatest circumference, 1 inch. In food and general habits this species resembles the pelagic, venomous, serpents; in its element, it is active, but on dry, blinded by the daylight, it is sluggish and of uncertain movements.

FAM. COLUBRIDÆ, Bonaparte.

TERRESTRIAL.

Gen. Calamaria, *H. Boie.*

Body diminutive, elongated, obtuse at both extremities, throughout of equal diameter, cylindrical; eyes very small with round pupil; frontals one pair, laterally extending to the labials; frenals none; nostrils lateral, opening in a small shield between the frontal, rostral and anterior labial; one præ-orbital, one post-orbital, four mental shields; dorsal scales rhombic, polished, smooth; tail very short.

Calamaria lumbricoidea, Schlegel, Var.

Syn.—Calamaria lumbricoidea, Boie, MS.
Calamaria virgulata, Boie, MS. (Young.)

* *Essai*, &c. p. 492.

Strongly iridescent, brownish-black, lighter on the head, scales with whitish edges; cheeks, lips and throat citrine; the lowest row of scales and abdominal surface yellowish white; sub-caudal scutella faintly marked with brown; eyes and tongue black.

Scuta 169; Scutella 26.

Habit.—*Pinang, Singapore.*
Celebes, Java.

This variety differs in nothing but colours from the species described by M. Schlegel. Of three individuals observed, two were taken by Sir W. Norris and W. T. Lewis, Esq. in the hills of Pinang, the third by Dr. Montgomerie at Singapore. The largest was of the following dimensions:

Length of the head, ...	$3\frac{3}{8}$ inch.
Ditto ditto trunk, ...	$11\frac{6}{8}$
Ditto ditto tail, ...	$1\frac{3}{8}$
	1 ft. $1\frac{4}{8}$ inch.

Circumference $\frac{6}{8}$ inch.

The livery bears a remarkable resemblance to that of *Calamaria alba* (Linné), (*C. brachyorrhos*, Schlegel,) from which it however differs in the absence of the anterior frontal shields, and in having 13 instead of 17 longitudinal series of scales.

Calamaria linnei, H. Boie, Var. Schlegel.

Syn.—Calamaria reticulata, Boie, MS.?
Changulia albiventer, Gray: Ill. Ind. Zool. Pl.—Fig. 6—9.*
Calamaria linnei, Var Schlegel.

Adult. Head brown, minutely dotted with black, lips and cheeks pale gamboge; trunk reddish brown, on each side with two vermillion longitudinal bands with black serrated edges; beneath carmine with a black serrated line on each side; subcaudal scutella with a central black, zig-zag line; all the colours strongly iridescent; eyes black, tongue vermilion.

Young. Like the adult, but with a broad black nuchal band, edged

* Referred by M. Schlegel to *C. lumbricoidea*, but the characteristic distribution of the colours is that of the present *Var*. The figure however is not good, and not coloured from life.

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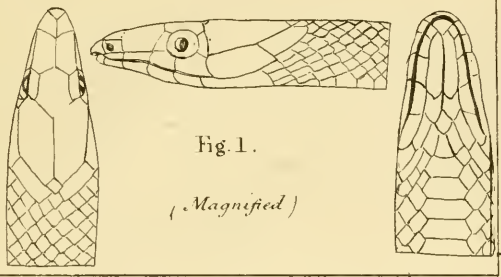

Fig. 1.

(Magnified)

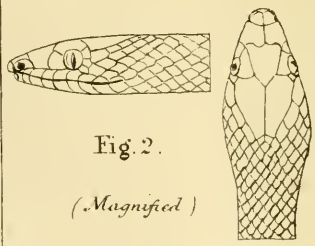

Fig. 2.

(Magnified)

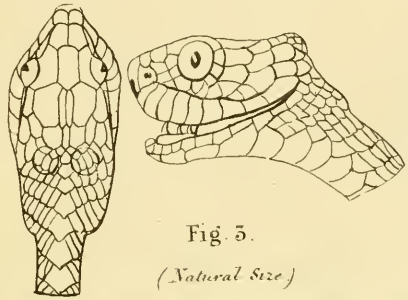

Fig. 3.

(Natural Size)

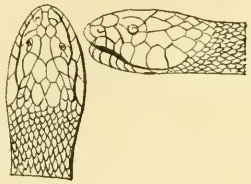

Fig. 4.

(Natural size)

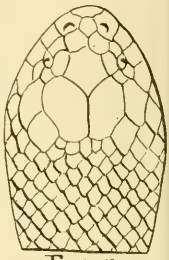

Fig. 5.

(Natural size)

Fig. 6.

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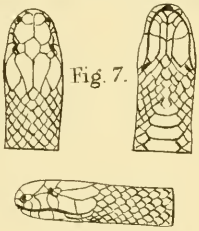


Fig. 7.

(Natural size

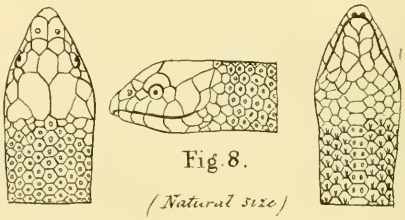


Fig. 8.

(Natural size)

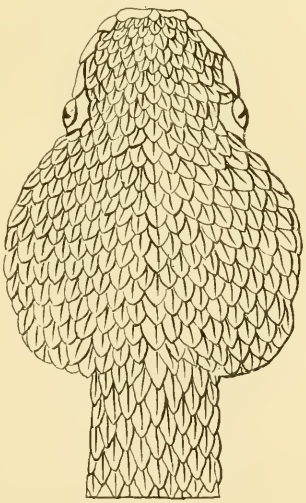
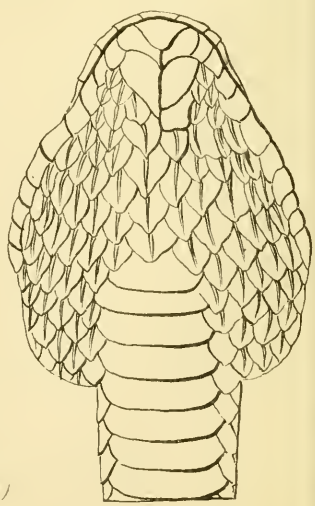


Fig. 9.

(Natural size)



T. Black Asiatic Lith.e Press Cal

Dr. Cantor del.

with white, a vermilion band at the root of the tail, and in some a similar near the point.

Scuta 166, Scutella 17.

Habit.—*Pinang.*
Java.

The present variety corresponds in all particulars to the description of *C. linnei* by M. Schlegel, who however does not mention that the two or three anterior teeth on each side of the lower jaw are longer than the rest. Of six individuals from the hills of Pinang the largest individual measured

Length of the head,	$0\frac{2}{8}$ inch.
Ditto ditto trunk,	$10\frac{1}{8}$
Ditto ditto tail,	$0\frac{5}{8}$
	11 inch.

Circumference of the neck $\frac{3}{8}$, of the trunk $\frac{4}{8}$ inch.

Calamaria longiceps. n. s. (See plate, Fig. 1.)

Strongly iridescent soot-coloured, a shade lighter beneath ; the scuta and scutella edged with whitish. Eyes and tongue black.

Scuta 131, Scutella 26.

Habit.—*Pinang.*

The head is elongated, narrow, conical, the muzzle rounded, projecting over the lower jaw. The anterior frontals are much smaller than the frontals, which on the sides occupy the place of the absent frenal shield, and thus reach the second upper labial; the nasal is very small, rectangular, perforated by the rather large nostril near the lower anterior angle. The eye is comparatively large, between an obliquely placed rectangular præ-orbital, and a similar post-orbital shield ; the supra-orbitals are narrow, rectangular ; the vertical moderate, pentagonal, arched and somewhat narrowed at the anterior margin. The occipitals, the largest, are elongated, bordered below by the large fifth upper labial, and behind by a single pair of post-occipitals. Each jaw has 5 pairs of labials. Of the 2 pairs of mentals, the anterior is the longer, and is enclosed by the rostral and 3 anterior labials, the posterior pair, by the fourth labial. The teeth are minute, sharp, reclining, all of equal size. The trunk is cylindrical, narrowed towards

both extremities, covered with 15 longitudinal series of smooth, rhombic, imbricate scales. The abdomen is arched, the short tail tapering to a blunt point. This species approaches to *Calamaria alba* (Linné), (*C. brachyorrhos*, Schlegel), but differs by its elongated shape of the shields of the head, and its larger eyes. A single individual, captured by W. T. Lewis, Esq., on the Great Hill of Pinang, was of the following dimensions :

Length of the head, ...	$0\frac{3}{8}$ inch.
Ditto ditto trunk, ...	5
Ditto ditto tail, ...	$0\frac{6}{8}$
	$6\frac{1}{8}$ inch.

Circumference of the trunk $\frac{9}{16}$, of the neck $\frac{3}{8}$, at the root of the tail $\frac{3}{8}$ inch.

Calamaria sagittaria.

Syn.—Calamaria sagittaria, Cantor : Spicil.

Head yellow or white, marbled with black, forming a streak above the citrine lips ; neck white with a black arrow-shaped mark ; back partly ash, partly rust-coloured, with a medial series of distant minute black spots; sides bluish-black or grey, with a narrow black line above; beneath citrine, the throat marbled with black, and with a minute black spot near the lateral angle of each scutum. Iris golden, tongue carmine.

Scuta 216 to 227 ; Scutella 57 to 70.

Habit.—*Malayan Peninsula.*
Bengal, Assam.

But for the diminutive size, and the reduced shields of the head and throat, this species might be taken for a *Coronella*. The head is but little distinct, depressed, ovate, covered by the normal number of shields. The anterior frontals are very small, pentagonal ; the frenal short rectangular. The nostrils are rather large, piercing the middle of the nasal. The eyes are large, prominent with one præ-orbital, two post-orbitals ; the upper jaw, but slighly longer than the lower, has on each side 6 labials, the lower 7, enclosing two pairs of small mentals. The temples are covered by three shields. The trunk, with 17 longitudinal series of smooth, rhomboidal imbricate scales, is slightly thick-

er towards the middle than at the extremities; the back throughout depressed, forming an angle with the sides, and the abdomen is flat, which makes a vertical section of the body square. The tail is very slender, tapering to a sharp point, and exceeds one-fifth of the entire length. The teeth are very minute, of equal size. A single specimen from the Malayan Peninsula was of the following dimensions:

Length of the head, ...	$0\frac{2}{8}$ inch.
Ditto ditto trunk, ...	$9\frac{3}{8}$
Ditto ditto tail, ...	$2\frac{2}{8}$
	$11\frac{7}{8}$ inch.

Circumference of the trunk: $\frac{4}{8}$, of the neck and root of the tail $\frac{3}{8}$ in.

In Bengal this species is of no uncommon occurrence, particularly during the rainy season, when the water compels the serpents to leave the shady recesses which most of them occupy to avoid the heat of the day. The present species appears to be closely allied to the African *C. arctiventris*, Schlegel.

Of the preceding four species, the three first appear at Pinang exclusively to inhabit the hills, but the variety of *C. lumbricoidea* occurs at Singapore in valleys. They are nowhere to be met in numbers. They are of gentle peaceable habits, never attempting to bite, and scarcely to escape. They are sluggish, move but slowly, and to a short distance, even when compelled by danger, and soon resume the motionless position which they appear to affect. The remarkable abstinence of most of their congeners, they possess but in a very limited degree. In captivity they refuse food, and soon expire; besides, they are so delicate, that slight pressure in examining them, is sufficient to kill them. Their bodies are very smooth, and brilliantly reflect rain-bow-colours, which continue in preserved specimens, long after the gay livery has faded. They feed upon slugs, earth-worms, and insects. The stomach of a *C. sagittaria* contained remains of an *Iulus* and some sand. In general appearance, and habits these species of *Calamaria* strongly resemble the Malayan *Elaps* (vide infra.)

Gen. Coronella, *Laurenti*.

Head above covered with large plates, of which one between the eyes;

sides of the head and occiput with imbricate scales; trunk narrowed near the head, thicker towards the middle; tail conical, elongated, tapering to a sharp point.

CORONELLA BALIODEIRA, Schlegel.

SYN.—Patza Tutta, Russell I. Pl. 29?
Coluber pictus, Daudin?
Coluber plinii, Merrem?
Coronella baliodeira, Boie MS.

Above lighter or darker olive brown, yellowish on the head, the scales minutely dotted with dark brown; the anterior part of the trunk with a number of distant transversal ocellated lines, composed of single transversal series of white scales, edged with black, labial shields yellow edged with black; beneath pearl coloured or yellowish white; iris golden, lower half blackish; tongue black.

Scuta 122 to 132; Scutellæ 65 to 72.

HABIT.—*Pinang.*
Java.

Of two individuals from the hills of Pinang, the larger was of the following dimensions:

Length of the head, ...	$0\frac{5}{8}$ inch.
Ditto ditto trunk, ...	$8\frac{5}{8}$
Ditto ditto tail, ...	$3\frac{6}{8}$
	1ft. 1 inch.

Circumference of the neck $\frac{4}{8}$, of the trunk $\frac{7}{8}$, of the root of the tail $\frac{5}{8}$ inch.

Both agree with the description of M. Schlegel, except in having two small præ-orbitals instead of one. Russell's No. 29, from Casemcottah, which according to M. Schlegel is *Coluber pictus*, Daudin, *C. plinii*, Merrem, is probably intended to represent the present species. It is of fierce habits.

GEN. XENODON, *H. Boie.*

Head scarcely distinct, muzzle obtuse, nostrils rounded, between 3 shields; eyes encircled behind only by 3 shields; trunk short robust; tail rather, short slowly tapering; 4 very large mentals, the last upper maxillary tooth the longest.

XENODON PURPURASCENS, Schlegel.

SYN.—Coronella albocincta, Cantor, (Var.)

Above olive brown with black spots, and numerous pale red transversal zig-zag bands, each with a submarginal black line. The first occupies the space between the eyes, continuing obliquely backward over the cheeks and lips; the second, arrow-shaped, diverging over the neck; labial shields yellow with brown margins. Beneath strongly iridescent pale carmine; every other scutum entirely or partially black near the lateral angles. Iris circular, golden, lower half dotted with black; tongue black.

Scuta 179 to 183; Scutella 36 to 65.

HABIT.—*Pinang.*

Java, Tenasserim, (Var) Chirra-Punji, Assam, Darjeling, Midnapore (Bengal.)

A solitary individual observed on the summit of the Great Hill of Pinang, defended itself vigorously. The dimensions were:

Length of the head, ...	0 ft.	1 inch.
Ditto ditto trunk, ...	1	$8\frac{3}{8}$
Ditto ditto tail, ...	0	$3\frac{5}{8}$
	2 ft.	1 inch.

Circumference of the neck, $1\frac{4}{8}$, of the trunk 2, of the root of the tail $1\frac{1}{8}$ inch. It differs from the description of M. Schlegel in having 21 longitudinal series of scales instead of 19, and on the right side 3 præ-orbitals. Labials on each side $\frac{8}{10}$. The Variety described as *Coronella albocincta* inhabits Assam, Chirra Punji, Darjeling, and Midnapore (Bengal.) It differs from those of the southern localities in having the head not distinct from he trunk, and its shields are shorter. The eyes are smaller, and, owing to the much swollen cheeks, appear sunk, which with the remarkably shelving profile, contribute to render the physiognomy singularly scowling. The largest specimen in the Museum of the Asiatic Society measures in length 2 feet $5\frac{3}{8}$ inch., of which the head $\frac{6}{8}$, the trunk 2 feet $1\frac{5}{8}$, and the tail 3 inch. In all, the livery is individually varying, but the arrow-shaped mark, double in some, appears to be constant. Labials on each side $\frac{7}{9}$.

Gen. Lycodon, *H. Boie.*

Head not very distinct, oblong, depressed; supra-orbital shield triangular, narrowed in front; præ-orbital one; post-orbitals two; frenal one; eyes sunk, far removed from the muzzle; pupil vertical; trunk elongated, somewhat compressed with smooth, rhomboidal, imbricate scales; tail short, tapering: anterior maxillary teeth longer than the rest.

Lycodon aulicus, (Linné.)

Syn.—Coluber aulicus, Linné (not apud Daudin.)
Russell* I, Pl. 16, Gajoo Tutta.
Coluber striatus, Shaw?
Coluber malignus, Daudin.
Lycodon hebe, Boie, apud Wagler, Schlegel (*excl. Synon. Col. hebe, Daud.*)

Lighter or darker chestnut with numerous white transversal bands, (in some spotted with black,) on the sides forming a forked network, composed of brown scales edged with white; on each side of the hind-head a white triangular spot (confluent in some,) with brown spots; lips similarly coloured; beneath pearl-coloured; eyes black; tongue whitish.

Scuta 208 to 257; scutella 57 to 91.

Habit.—*Pinang.*
Bengal, Coromandel.

Var. A.

Syn.—Lycodon hebe, Var, Schlegel.

With a number of large square white spots, with black edges and central spots.

Habit.—*Pinang.*
Bengal.

Var. B.

Syn.—Russell II, Pl. 37.
Lycodon capucinus, Boie.
Lycodon hebe, Var. javan. Schlegel.
Lycodon atropurpureus, Cantor.

* Russell I, Pl. 26, Karetta, upon which is founded *Coluber galathea*, Daudin, appears to represent the present species, or one of its Varieties.

Chesnut or deep purple marbled with white veins, edged with black, with or without a white collar.

HABIT.—*Pinang, Malayan Peninsula.*
Tenasserim Provinces, Java.

VAR. C.

LYN.—Lycodon hebe, Var. timorensis, Schlegel.
Chestnut, with a white collar, and indistinct traces of white network.

HABIT.—*Pinang, Malayan Peninsula.*
Pulo Samao, Timor.

VAR. D.

SYN.—Russel II, Pl. 39.
Lydocon subfuscus, Cantor.

Uniformly light brown above, the lips white, edged with brown.

HABIT.—*Malayan Peninsula.*
Bengal.

This species occurs in the Malayan countries both in the hills and valleys, but it is apparently not so numerous as it is in Bengal. It is of fierce habits and defends itself vigorously, In one examined the stomach contained a young *Euprepis rufescens*, (Shaw).

The largest individual observed, *Var. B.*, was of the following dimensions:

Length of the head,.....	0 ft.	$0\frac{6}{8}$ inch.
Ditto ditto trunk,.....	1	$8\frac{7}{8}$
Ditto ditto tail,.....	0	$4\frac{1}{8}$
	2 ft.	$1\frac{6}{8}$ inch.

Circumference of the neck 1 inch, of the trunk $1\frac{4}{8}$, of the root of the tail $\frac{7}{8}$ inch.

Ophites.—Wagler differing from *Lycodon* in the absence of the præ-orbital shield; frenal elongated; eyes small, scales rhombic with truncated points; some of the posterior dorsal scales keeled.

LYCODON PLATURINUS, (SHAW,)

SYN.—Seba Thes. I, 83, 3.
Russel, II, Pl. 41.
Coluber platurinus, Shaw.
Coluber platyrhinus, Merrem.
Lycodon subcinctus, H. Boie.
Ophites, Wagler.
Lycodon subcinctus, apud Schlegel.

Shining blackish brown with steel blue reflections, and a varying number of broad, distant bands, the lips, throat and a collar all white, spotted with black; beneath pale blackish brown, the anterior part of the abdomen, the sharp lateral angle and the broad posterior margins of the scuta and scutella whitish. Eyes black; tongue flesh-coloured.

Scutta 221, Scutella 74.

Habit,—*Pinang.*

Java, Bengal.*

On both sides of each jaw the anterior 4 or 5 teeth increase in size and are longer than the rest. The fifth upper maxillary tooth is removed from the preceding, which in addition to the general shape of the head and the lax integuments, imparts to this serpent a striking resemblance to the venomous genus *Bungarus*. In fierceness it resembles the preceding species. The only individual observed was captured near the summit of the Great Hill of Pinang, where it had seized a large *Euprepis rufescens*, (Shaw). It was of the following dimensions.

Length of the head, ...	0 ft.	1	inch.
Ditto ditto trunk, ...	2	$8\frac{4}{8}$	
Ditto ditto tail, ...	0	$7\frac{4}{8}$	
	3ft.	5	inch.

Circumference of the neck $1\frac{5}{8}$, of the trunk $2\frac{4}{8}$ inch.

Lycodon effræNis, n. s.

Shining bluish black above, with a few minute white spots, not affecting the ground colour; the throat, lips, and a band, bordering the sides of the head from the muzzle to the hind head, buff coloured, finely marbled with black; beneath strongly iridescent, pale bluish black, the scuta with whitish edges; the body encircled by a number (11,) of broad distant buff rings, above with indentated margins. Eyes black, pupil elliptical; tongue whitish.

Scuta 228; Scutella 72.

* According to M. Schlegel, who observes that a specimen has been forwarded from Bengal by M. Duvaucel. No specimen exists in the Museum of the Asiatic Society, nor are the natives acquainted with the species.

Habit.—*Pinang.*

The head is elongated, ovate depressed, broader than the neck, the muzzle rounded, slightly projecting; the anterior frontals are orbicular pentagonal, much smaller than the frontals, which are bent over the sides, substituting the absent frenal, so as to meet the second upper labial; the nasal is small, rectangular, obliquely wedged in between the rostral, the two pairs of frontals, and the anterior upper labial; the nostril large, piercing the middle of the shield; the vertical is elongated pentagonal, broader in front, so as to render the posterior part of the moderate supræorbitals broader than the anterior; the occipitals are the largest, elongated, on each side surrounded by 3 scales, somewhat longer than the rest covering the temples, and behind by two small post-occipitals. The eyes are proportionally large and prominent, surrounded by one præorbital and two smaller post-orbitals, the lower of which touches the narrow projecting fifth upper labial, which with the fourth, borders the lower part of the orbit; the jaws are covered by 8 pairs of upper, 9 of lower labials. The gape is moderate; the particulars of the dentition noted in *L. platurinus*, exist in the present species. The two anterior of the three pairs of small elongated mental shields are bordered by the six anterior pairs of labials; behind by a number of small scales. The trunk is slender, decreasing towards both extremities, with 17 longitudinal series of smooth, rhomboidal, slightly imbricate scales. The back is depressed, forming an angle with the compressed somewhat bulging sides. The latter are joined to the flat narrow abdomen under a right angle on the sides of the scuta, so that the vertical section of the body is quadangular. A single individual found by Sir Wm. Norris on the Great Hill of Pinang, was of the following dimensions:

Length of the head,	$0\frac{4}{8}$ inch.
Ditto ditto trunk,	$9\frac{6}{8}$
Ditto ditto tail,	$2\frac{2}{8}$
	1 ft. $0\frac{4}{8}$ inch.

Circumference of the neck $\frac{4}{8}$, of the trunk $\frac{6}{8}$, of the root of the tail $\frac{2}{8}$ inch.

In fierceness the present species resembles its congeners, but unlike them, it raises vertically the anterior part of the body, and bites after

a few oscillating movements from side to side. *Lycodon platurinus*, and *aulicus*, like many other harmless,—and some venomous serpents, the pupils of which are vertically closed by the light, prepare to attack horizontally coiled on the ground, with the head bent close to the body, and drawn as far backwards as possible, when, suddenly uncoiling the anterior part of the body, they dart obliquely upwards, but as they are blinded, not always in the direction apparently aimed at, and they frequently miss the aim.

GEN. COLUBER, *Linné*

Abdomen with scuta; scutella under the tail.

COLUBER FASCIOLATUS, Shaw.

SYN.—Russel I. Pl. 21 Nooni Paragoodoo.
Coluber hebe, Daudin *(Synon.* apud Boie, Wagler, Schlegel).

"Cineritious grey with an obscure cast of reddish brown, particularly about the head and neck. The back variegated by black and white, or black and yellowish, narrow bands; and on the sides are two or three rows of short, separate oblique lines, formed by the yellow or white edges of the lateral scales; but in general these bands are not visible on the tail. The scuta (192) and scutella (62) are of a dusky pearl-colour." (*Russell I. Pg.* 26.)

HABIT.—*Malayan Peninsula.*
Coromandel Coast.

A young individual, killed in Province Wellesley corresponds to the description of Russell, copied by Shaw and Daudin. It has two small post-orbitals, one elongated præ-orbital, one minute irregularly hexagonal frenal, and on each side 8 upper, 9 lower labial shields. The trunk is covered by 21 longitudinal series of smooth imbricate scales, which are rhombic on the sides, rhomboidal above, all with rounded points. The teeth are of uniform size, and as Russell correctly describes them, very small, reflex, sharp, numerous. The dentition, therefore, sufficiently indicates that the species cannot be placed in the Gen. *Lycodon*, to which it has been referred by M. M. H. Boie, Wagler and Schlegel. The young one is of the following dimensions

Length of the head,	$0\frac{4}{8}$ inch.
Ditto ditto trunk,	$8\frac{1}{8}$
Ditto ditto tail,	$2\frac{1}{8}$
	$10\frac{6}{8}$ inch.

Greatest circumference of the trunk, $\frac{5}{8}$ inch.

Scuta 201 ; Scutella 73.

COLUBER RADIATUS, Schlegel.

SYN.—Russell II. Pl. 42.
Coluber quadrifasciatus, Cantor, (Var)

Head and back light yellowish bay, paler on the sides ; the hind head with a transversal black line, branching off along the exterior margins of the occipitals ; a black oblique streak behind the eyes, and another beneath them dividing both jaws. On each side of the back a broad longitudinal black band, relieved at intervals by a short network, produced by 3 or 4 scales of each series being edged with pale brown, and the skin between them white. The bands, in some commencing at a distance from the head, are continued or interrupted, terminating on the posterior part of the back. Below them is on each side a parallel black line ; lips, throat and lower surface yellow. Iris bright gamboge with a concentric black ring. Tongue bluish black.

Young. Above of clearer colours ; beneath pearl-coloured.

Scuta 222 to 218 ; Scutella 82 to 94.

HABIT.—*Pinang, Singapore, Malayan Peninsula.*
Java, Sumatra, Cochin China, Tenasserim, Assam.

This species is numerous in marshes, and paddy-fields, and often becomes a tenant of out-houses, where during the day it remains concealed, till nightfall favours its pursuit after rats. It is however equally diurnal, preying upon smaller birds, lizards and frogs. Assam produces a local variety distinguished by 18 instead of 17 longitudinal series of scales, of which the 3 upper ones are all lineated, whereas normally such is the case on those of the posterior part of the body. It makes a vigorous defence, and in darting at an enemy is capable of raising nearly the anterior two thirds of the body from the ground. In a female were found 23 whitish, soft, cylindrical eggs, of which the largest measured $1\frac{1}{8}$ inch. in length. The largest individual observed was of the following dimensions :

Length of the head, ...	0 ft.	$1\frac{1}{8}$ inch.
Ditto ditto trunk, ...	4	$3\frac{4}{8}$
Ditto ditto tail, ...	0	$10\frac{4}{8}$
	5 ft.	$3\frac{4}{8}$ inch.

Greatest circumference, $3\frac{6}{8}$ inch.

Habits and general appearance link the present species to *Col. dhumnades*, Cantor,* and *Col. mucosus*, Linné (*Col. blumenbachii*, Merrem,) but the latter as well as its variety with uniformly smooth scales (*Col. dhumna*, Cantor: Spicil.) utter when irritated a peculiar *diminuendo* sound, not unlike that produced by a gently struck tuning-fork.

Coluber korros, Reinwardt.

Syn.—Coluber korros, Reinwardt, apud Wagler, Schlegel.

Brownish green above, the scales of the posterior part of the trunk and of the tail with black points and edges, producing a regular network; beneath yellowish white or pearl-coloured; the lateral part of the scuta light bluish-grey. Iris bright yellow with a bluish grey or blackish concentric ring, tongue black.

Young.—Above with some indistinct transversal bands, produced by two lateral white spots on some of the scales; the posterior part of the trunk with dark longitudinal lines.

Scuta 162 to 190; Scutella 79 to 136.

Habit.—*Pinang, Singapore, Malayan Peninsula.*
Java, Sumatra, Arracan, Tenasserim.

It is numerous in the Malayan vallies. The largest individual measured:

Length of the head, ...	0 ft.	$1\frac{2}{8}$ inch.
Ditto ditto trunk, ...	2	$6\frac{2}{8}$
Ditto ditto tail, ...	1	$4\frac{2}{8}$
	3 ft.	$11\frac{6}{8}$ inch.

Greatest circumference of the trunk 3 inches.

Its habits are similar to those of the last mentioned species, from which it is easily distinguished by its 15 longitudinal series of smooth rhomboidal scales with rounded points.

Coluber hexahonotus, N. S.

Head and back dark brown, changing to pale brownish buff on the sides; trunk with numerous, close, transversal black bands, each with

* *Chusan.*—It is covered by 14 to 16 long it. series of rhomboidal scales, of which those of the two uppermost series commence at a short distance from the head, exhibiting the central raised line.

a few white spots on the lower parts, becoming indistinct towards the posterior extremity of the trunk, from whence the colour is uniformly dark brown; labial shields yellow, edged with black; beneath yellowish white, scutella edged with brown. Iris gamboge with a black concentric ring; pupil round, tongue black; central series of dorsal scales hexagonal.

Scuta 191; Scutella 148.

Habit.—*Pinang.*

The head is distinct, elongated, with the muzzle broad, truncated, covered above with the normal number of shields, in form resembling those of *Col. korros.* The eyes are large, prominent, with two præorbitals, of which the superior is the larger, the inferior is wedged in between the 3rd, 4th and 5th upper labials. In addition to two postorbitals, there is an elongated crescent-shaped infra-orbital, resting on the 6th and 7th upper labials. The latter are 8 on each side, of which the 5th, broad hexagonal, borders the orbit; the following are elongated, gradually increasing in size. The lower labials, 9 on each side, lie on the chin in contact with two pairs of elongated shields. The nostrils are rather large, orbicular, opening near the margin of the anterior frontals. The frenal is small, obliquely situated between the surrounding shields. The temples are covered by two pairs of elongated shields. The gape is wide, the teeth minute, of equal length. The trunk is slender, much compressed with 17 longitudinal series of smooth, rhombic, sub-imbricate scales, of which the central series is hexagonal. The abdomen narrow, arched. The tail is very slender elongated, tapering to a sharp point.

A solitary individual, discovered by Sir William Norris on the Great Hill of Pinang, was of the following dimensions:

Length of the head, ...	$0\frac{5}{8}$ inch.
Ditto ditto trunk, ...	10
Ditto ditto tail, ...	$4\frac{5}{8}$
	1 ft. $3\frac{3}{8}$ inch.

Circumference of the neck $\frac{5}{8}$, of the trunk 1 inch., of the root of the tail $\frac{3}{8}$. In fierceness it resembled the preceding species.

ARBORIAL.

Gen. Dipsas, *Laurenti.*

Head large, broad, depressed, cordate, covered with shields; neck narrow, trunk much narrower than the head, compressed, very long, beneath covered with scuta; tail cylindrical, imbricate.

Dipsas dendrophila, Reinwardt.

Syn.—Scheuchzer, 662, Fig. 11. (Col. variabilis, apud Merrem.)
Dipsas dendrophila, apud Wagler.
Dipsas dendrophila, Wagler, apud Horsfield: *Life of Raffles.*
Dipsas dendrophila, apud Schlegel.

Head, back and sides intense black with steel-blue, lilac, and green reflections; beneath pale black, iridescent; body and tail with numerous bright yellow transversal bands, widened below, sometimes joined on the back or abdomen, occasionally reduced to irregular spots; throat and lips bright yellow, labials with black edges. Pupil elliptical, vertical; iris and tongue black.

Scuta 218 to 225, Scutella 100 to 112.

Habit.—*Pinang, Singapore, Malayan Peninsula,*
Java, Celebes.

It inhabits the Malayan hills and valleys, but apparently in no great numbers. The largest individual measured:

Length of the head, ...	0 ft.	$1\frac{4}{8}$ inch.
Ditto ditto trunk, ...	3	$3\frac{7}{8}$
Ditto ditto tail, ...	1	0
	4 ft.	$5\frac{3}{8}$ inch.

Greatest circumference of the trunk, 4 inch.

Dipsas multimaculata, Schlegel.

Syn.—Scheuchzer, 657, Fig. 2.
Russell, II. Pl. 23.
Dipsas multimaculata, Schlegel

Ground-colour, above light greenish grey, minutely spotted and marbled with brown; on the head an angular, backwards diverging black mark with whitish edges; a black oblique line from behind the eyes to the hind head, where it joins a lozenge-shaped black spot with whitish edges; along the back and tail a series of large, irregularly oval, black spots with whitish edges, arranged in close quincunx series;

the sides with numerous, similarly coloured, oblique or arched, often interrupted, bands ; labials greenish white, black-edged ; beneath greenish white, tinged with rose-colour, minutely spotted with brown, and with a double or treble lateral series of irregular black spots. Iris pale greenish golden, minutely dotted with black ; pupil elliptical, vertical ; tongue whitish.

Scuta 202 to 235, Scutella 80 to 106.

Habit.—*Pinang, Malayan Peninsula.*

Celebes, Java, Tenasserim, Bengal.

On the hills of Pinang this species appears to be more numerous than the former. The largest individual measured :

Length of the head, ...	0 ft.	$0\frac{5}{8}$ inch.
Ditto ditto trunk, ...	1	$10\frac{4}{8}$
Ditto ditto tail, ...	0	$5\frac{6}{8}$
	2 ft.	$4\frac{7}{8}$ inch.

Greatest circumference, $1\frac{2}{8}$ inch.

The central hexagonal scales are elongated, narrow on the anterior part of the trunk, which is covered by 19 longitudinal series of smooth, lanceolate, imbricate scales ; from thence commence 17 series of broader scales.

Dipsas cynodon, Cuvier.

Syn.—Dipsas cynodon, apud Boie, Guerin, Schlegel.

Young. Ground-colour yellowish brown, head with a dark black-edged arrow-shaped mark, and a black oblique streak from the eye to the nape of the neck ; labials pearl-coloured, edged with black ; back with numerous black transversal marks, shaped like two letters *V* placed horizontally towards each other or in quincunx, becoming indistinct towards the tail. Beneath pearl-coloured with a black spot near the lateral part of the scuta ; scutella edged and minutely dotted with brown.

Scuta 225, Scutella 92.

Adult. Head and back uniformly greyish brown tinged with lilac, with a number of distant large, transversal, purple, bands (the scales edged with black), lozenge-shaped with triangular lateral appendages, becoming indistinct towards the tail, which is alternately brownish buff

and purple with black-edged scales. Beneath pale yellow, scutella minutely dotted and edged with brown. Iris pale golden, minutely dotted with purple; pupil elliptical vertical; tongue whitish.

Scuta 275, Scutella 158.

Habit.—*Pinang, Malayan Peninsula.*

Java, Tenasserim.

A young one was captured on the Great Hill of Pinang by W. T. Lewis, Esq. An adult, killed in Province Wellesley, was of the following dimensions.

Length of the head, ...	0 ft.	$1\frac{4}{8}$ inch.
Ditto ditto trunk, ...	4	$0\frac{3}{8}$
Ditto ditto tail, ...	1	4
	5 ft.	$5\frac{7}{8}$ inch.

Circumference of the neck, $1\frac{6}{8}$, of the trunk, $2\frac{4}{8}$ inch.

The young had 21, the adult 23 longitudinal series of smooth, lanceolate, imbricate scales. The long maxillary and palatal teeth are disproportionally less developed in the young than in the adult.

Dipsas boa, (H. Boie.) (See Plate, Fig 3.)

Syn.—Amblycephalus boa, H. Boie: Isis.
Dipsas boa, apud Schlegel.

Ground colour above: rose-coloured washed with brown, varying in intensity and shade from light bay to umber, prevailing so as to make the ground colour appear as minute spots, and with numerous irregular black spots, confluent on the head; cheeks and lips carnation, with a vertical black streak from the middle of the orbit. Beneath carnation, dotted with umber, sometimes assuming the shape of large irregular spots. Iris: silvery rose-coloured, lower half dotted with black, pupil elliptical, vertically contracted by the light; tongue whitish.

Scuta abdominalia 164, Scuta subcaudalia 112; or 170+109.

Habit.—*Pinang.*

Java.

The head is depressed, elongated, conical, with the muzzle truncated; the rostral shield is very large, vertically placed; the cheeks compressed, but the lips very tumid below the eyes. Of the nine crown shields the occipitals are distinguished by their reduced size, and

frequent sub-division in 2 linear inter-occipitals, bordered by two large polygonal post-occipitals, enclosing a smaller third, linear. Behind the latter appears on each side a small hard tubercle, covered like the rest of the hind head with minute polygonal scales. Each temple is protected by 5 to 6 large shields, and as many smaller resting upon the labials. The nasal is large, pyramidal with the rounded nostril in the centre, and the apex wedged in between the 3 frenals, placed obliquely or vertically one above the other. The eye is large, prominent, encircled by the supra-orbital and 7 smaller shields, so that none of the upper labials reach the orbit. The lips are arched, and outwardly appear to reach to the hind head, but the commissure, or the angle of the mouth is situated immediately below the eye, which greatly reduces the opening of the mouth. Of the 9 pairs of upper labials the anterior 6 are narrow, but very deep and bulging; the posterior 3 are broader, elongated; the inferior labials, 11 pairs, are as well as the rostral, greatly reduced by the 3 pairs of very large mentals. The front view of the head grotesquely resembles that of a mastiff. All the teeth are strong, but the front tooth on each side of the lower jaw is longer than the rest; the palatal rows are very close together, and converging. The trunk is much compressed, covered by 13 longitudinal series of scales, of which the dorsal row is composed of very large hexagonal ones, each with a strong keel; the rest are smooth, rhombic, imbricate. The abdomen is very narrow, and the sides of the scuta are bent upwards. The tail is elongated, slender, tapering, and much less compressed than the trunk. Of two individuals from the hills of Pinang, the larger, a male, was of the following dimensions:

Length of the head,	0 ft.	1 inch.
Ditto ditto trunk,	1	11
Ditto ditto tail,	0	$11\frac{1}{8}$
	2 ft.	$11\frac{1}{8}$ inch.

Circumference of the neck 1 inch, of the trunk $1\frac{5}{8}$, of the root of the tail $\frac{7}{8}$ inch. In a female were observed 4 cylindrical, whitish eggs, each $\frac{6}{8}$ inch in length. The stomach contained a few remains of insects.

This species is closely allied to *Dipsas carinata*, Schlegel, (*Amblycephalus*, Kuhl; *Pareas*, Wagler,) in which also the dorsal series of

scales are keeled. M. Schlegel's short description and figure (Pl. XI, 29, 30) appear to have been taken from an immature specimen.

The preceding four species are very fierce, their mode of attack is that of *Lycodon aulicus*. Kuhl has observed vibrating movements in the tail of *Dipsas multimaculata*, which however are also exhibited by *Dipsas trigonata* (Schneider), (*Col. catenularies*, Daudin,)—*D. cynodon*, Cuvier, and among the venomous serpents, by *Vipera russelli*, (Shaw) and several Asiatic species of *Trigonocephalus*, when they are irritated and preparing to bite.

Gen. Herpetodryas, *H. Boie.*

Head trigonal, very long, depressed, smooth, rather sharp; trunk and tail very elongated; scales, particularly those of the tail, large; those of the back partially carinate; in other respects resembling *Coluber*.

Herpetodryas oxycephalus, (Reinwardt.)

Syn.—Coluber oxycephalus, Reinwardt.
Gonyosoma viride, Wagler.
Herpetodryas oxycephalus, apud Schlegel.

Head above shining dark-green with a blackish straight line from the nostrils to the angle of the mouth; lips and throat pale yellowish green; trunk sea-green changing to light yellowish green on the lower part of the sides, all the scales with black edges; the anterior half of the tail, separated from the trunk by a transversal orange band, ochre, gradually changing to greyish brown on the posterior half, all the scales edged with black. Abdominal scuta light yellowish green with pale yellow edges; subcaudal scutella grey with black margins. Eyes moderate, little prominent; iris pale sea-green with a narrow pale yellow inner ring and a transversal black band; pupil circular, black. Tongue ultramarine, divided in the middle by a black longitudinal line. The exposed part of the larynx black.

Scuta 268, Scutella 149.

Habit.—*Pinang.*

Java, Celebes.

The shields of the head are elongated, most so the linear frenal. The teeth are numerous; in each row the anterior six or eight are

longer than the rest, which gradually decrease. The scales of the trunk, in 25 longitudinal series, are rhombic with rounded points, imbricate, and all smooth except those covering the spinous processes, which are faintly lineated.

Of two individuals from the hills of Pinang, the larger, taken by Sir William Norris, was of the following dimensions:

Length of the head, ...	0 ft.	$1\frac{4}{8}$ inch.
Ditto ditto trunk, ...	3	4
Ditto ditto tail, ...	1	1
	4 ft.	$6\frac{4}{8}$ inch.

Circumference of the neck 2, of the trunk 3, of the root of the tail $1\frac{4}{8}$ inch. The ferocious habits of this serpent have been accurately described by M. Reinwardt. It has in a remarkable degree the power of laterally compressing the neck and the anterior part of the body, when the greyish blue skin becomes visible between the separated scales. In such state of excitement it raises nearly the anterior third vertically from the ground, continues fixed during several seconds with vibrating tongue, and bites. It then throws itself down, to rise to a renewed attack. A similar mode of attack characterises the following species, viz: *Dryinus nasutus*, (Lacépède,) (Russell, I. Pl. 12 and 13,),—*D. prasinus*, (Reinwardt.) (*Dryiophis prasina* apud Schlegel,) *Leptophis pictus* (Gmelin), and *Leptophis caudalineatus*.

GEN. DRYINUS,* *Merrem*, 1820.

Upper jaw much longer than the lower; muzzle attenuated, more or less acute at the apex, which in some species is mucronate and moveable.

DRYINUS PRASINUS, (Reinwardt.)

SYN.—Seba, II, Tab. LIII, Fig. 4.
Coluber nasutus,† Shaw, apud Russell, II, Pl. 24.
Dryinus nasutus, Bell, (not Merrem, 1820.)

* In H. Boie's Genera, published in *Isis*, 1827, *Dryophis*, (Dahlman,) is substituted for this genus. Wagler in 1830 separated some species under the denomination of *Tragops*, and M. Schlegel in his "*Essay*" has exclusively retained *Dryiophis*, although Prof. Thos. Bell already in 1825 had published his article on *Leptophina* (comprising *Dryinus*, Merrem, and *Leptophis*, Bell.)

† The specific name was previously applied by Lacépède in 1790 to the other Asiatic species.

Dryophis prasinus, Reinwardt.
Tragops, Wagler.
Dryinus nasutus, Bell, apud Horsfield: *Life of Raffles.*
Passerita, Gray.
Dryiphis prasina, apud Schlegel.
"Ular daun" of the Malays.

Leek-green above, with some irregular white and black oblique lines, paler on the cheeks and upper lips; tail cinnamon; under lips and throat white, scuta and scutella light green or mother-of-pearl, on each side with a white or pale yellow longitudinal line, below which in some a second, green, line. Pupil black, elongated-pyriform, with the apex turned forwards, horizontally contracted by the light. Iris pale burnished golden, bright on the pupillary margin, the upper half of which forms a little behind its middle a small pointed lobe. Tongue bluish white.

Scuta 186 to 228, Scutella 140 to 203.

Habit.—*Malayan Peninsula and Islands.*
Celebes, Java, Cochin-China, Siam, Burmah, Tenasserim, Arracan, Bengal, Assam.

Var. A.

Syn.—Dryiophis xanthozonius, Kuhl?

Head less elongated and the rostral shield unusually small; upper lips in some white; besides the yellow and green lateral line, a central green; scuta and scutella in some with brown edges.

Habit.—*Same localities.*

Var. B.

Head above light brownish grey, tinged with sky-blue and rose-colour cheeks and lips pale rose; trunk light brownish ash, changing to pale rust colour on the tail; whitish grey on the sides; beneath buff, with a white longitudinal line on each side. Iris burnished silver, tongue white.

Habit.—*Pinang Hills.*

Var. C.

Upper parts saffron yellow, paler on the sides; beneath sulphur-coloured, with a lateral white line. Pupil deep burnished golden; tongue white.

Habit.—*Pinang Hills.*

This species is exceedingly numerous in the Malayan forests, both

in the hills and valleys, preying upon small birds, arborial lizards, frogs, and in early age upon insects. It may readily be distinguished from *Dryinus nasutus,* (Lacép.) (Merrem, not Bell ;—Russell, I. Pl. 12, 13) by two, sometimes 3 frenals on each side. The trunk is covered by 15 longitudinal series of smooth rhomboidal scales with rounded points, imbricate so as to appear linear ; those of the tail are all broad rhombic. The anterior upper maxillary teeth gradually increase towards the sixth, which is the longest, and enclosed in a pointed fold of gingiva. The following teeth, commencing at a short interval, are short, but the last is very long with a furrow on the convex edge. The inferior maxillary teeth also increase in length towards the sixth, the longest, and are protected by a broad triangular scabbard, containing several additional loose teeth ; the rest are uniformly small, commencing at a short interval from the sixth. The palatal are uniformly very short. The largest individual of a great number measured :

Length of the head, ...	0 ft.	2 inch.
Ditto ditto trunk, ...	4	$3\frac{5}{3}$
Ditto ditto tail, ...	2	$6\frac{4}{8}$
	7 ft.	$0\frac{1}{8}$ inch.

Circumference of the neck $1\frac{1}{8}$, of the trunk $2\frac{2}{8}$, of the root of the tail 1 inch.

The Varieties, of which *B.* and *C.* were from the hills of Pinang, are not numerous, and of a comparatively small size. The very young ones are as gentle as those of a more advanced age are ferocious. Their power of expanding the anterior part of the body and their mode of attack, have been noted under *Herpetodryas oxycephalus.*

Gen. Leptophis, *Bell,* 1825.

Rostrum obtuse, and the upper jaw projects but very slightly beyond the lower.

Leptophis pictus, (Gmelin.)

Syn.—Coluber pictus, Gmelin.
Coluber decorus, Shaw.
Russell, II. Pl. 26. Cumberi muken.
Bungarus filum, Oppel.
Dipsas schokari, Kuhl, (not Forskal.)
Dendrophis chairecacos, H. Boie.
Dendrophis, Wagler.
Dendrophis picta, Schlegel.

Head and body above bronze with strong golden reflections; skin beween the scales of the anterior part of the body alternately ultramarine and black. Lips, throat, the two lowest lateral rows of scales, and the abdominal surface silvery mother-of-pearl. From the muzzle to the root of the tail a black line, bordering above the silvery sides, which below are circumscribed by a second black line, commencing a little behind the head. Iris bright golden with a transversal black line; pupil black, circular; tongue scarlet.

Scuta 167 to 187, Scutella 109 to 149.

Habit.—*Malayan Peninsula and Islands.*

Manilla, New Ireland, Waigiou, Amboina, New Guinea, Pulo Samao, Java, Sumatra, Cochin-China, Tenasserim, Burmah, Bengal, Assam, Coromandel.

Var. A.*

Syn.—Coluber filiformis, Linné, (young.)
Fil, Double Raie, Lacépède, (young.)
Russell, II. Pl. 25, Mancas, Rooka, Maniar.
Coluber bilineatus, Shaw.
Leptophis mancas, Bell.
Dendrophis maniar, Boie.
Ahœtula bellii, Gray. Ill. Ind. Zool.
Dendrophis lateralis, Gray: Ill. Ind. Zool.
Chrysopelea boii, Smith.
Dendrophis picta, Var. Schlegel.
Dendrophis boii, apud Cantor.

Above dull brownish black, with a light brown dorsal line; the two lowest series of scales pale greenish white, forming a lateral band, bordered above by a black line, commencing from the muzzle, more or less distinct, in some irregularly broken up on the anterior part of the body. A second faint black line below. Iris golden, in some dotted with black; tongue black.

Habit.—*Malayan Peninsula.*

Bengal, Assam, Ceylon.

The species occurs numerously in the Malayan hills and valleys, but the contrary appears to be the case with the plain Variety, which in Bengal is equally common. The following must be added to the description of M. Schlegel. The frenal shield is small, rectangular;

* The Variety, *Col. polychrous*, Reinwardt, appears to inhabit neither the Malayan Peninsula nor Bengal.

superior labials 9, inferior 10 or 11; one præ-orbital, two, in some three small post-orbitals. The trunk is covered by 15 longitudinal series of smooth, imbricate scales; the central dorsal series is wedge-shaped, in some almost hexagonal, the next six are linear, but the lowest, as well as all the scales of the tail, are broad rhombic with rounded points. In a female were found seven coriaceous, whitish eggs of an elongated cylindrical shape, each $1\frac{3}{8}$ inch in length. In habits and mode of attack this species resembles *Dryinus prasinus*, but it is not exclusively arborial. Probably no instance affords a more striking difference in colours, between species and variety than the present: the former with dazzling brilliant livery; the latter in its plain, dull colours. Both attain to similar size: the largest male examined was of the following dimensions:

Length of the head, ...	0 ft.	$1\frac{1}{8}$ inch.
Ditto ditto trunk, ...	2	6
Ditto ditto tail, ...	1	1
	3 ft.	$8\frac{1}{8}$ inch.

Circumference of the neck, $1\frac{3}{8}$, of the trunk, 2, of the root of the tail, 1 inch. This serpent appears to possess uncommonly acute hearing, and turns its head in the direction of the sound.

LEPTOPHIS CAUDALINEATUS, N. S.

SYN.—Ahætula caudolineata, Gray: Illust, Ind. Zool.
Dendrophis ornata, Var, Schlegel.

Head, trunk, and tail above light brownish bronze, the scales with black edges; on the posterior half of the trunk four parallel black lines, terminating at the root of the tail, from whence commences a single central black line; sides metallic mother-of-pearl, from a short distance behind the head bordered by two parallel black lines of which the lower, the broader, covers the lower half of the last series of scales and the lateral part of the scuta; both the lines continue to the apex of the tail. Lips, throat and abdominal surface pale metallic citrine; the tail beneath with a black central line. Iris golden, dotted with brown; pupil round; tongue bluish white, the forked part black.

Young. Upper parts of the body Indian red, with metallic reflections.

Scuta 183 to 188, Scutella 105 to 110.

Habit.—*Pinang, Singapore.*

The head large, less depressed than in the preceding species, the muzzle broad, blunt; cheeks tumid; all the shields of the crown are short and broad, except the vertical which is laterally arched, and very narrow behind. There is a single elongated post-occipital, and the rest of the hind head is covered with broad hexagonal shields. Each temple is covered by two pairs of large shields, in front of which a pair of very minute ones, bordering upon the equally small post-orbitals. The eye is large, prominent; the præ-orbital and the linear frenal proportionally small; the nostrils large, opening in the middle of the nasal; the rostral broad, slightly arched beneath. The labials, 9 on each side of both jaws, resemble those of the preceding species. The mouth is large; the maxillary teeth strong, distant. In the lower jaw the anterior ones gradually increase in length till the fourth, which appears like a canine, the rest as well as the palatal teeth are all smaller, of uniform length. The chin is covered by the second pair of labials and two pairs of mentals, of which the posterior pair is elongated. The trunk is strong, less compressed than in the preceding species, with 13 series of smooth imbricate scales, of which the two lowest series are large rhombic with rounded points, the next four elongated rhomboidal (linear), and the odd central dorsal rhomboidal, not larger than the rest. The tail is covered with broad hexagonal, not imbricate, scales. The abdomen is narrow, flattened; the centre part of the scuta with strongly arched margins; the sides turned upwards and forming a continued sharp lateral ridge. The tail is slender, tapering; its vertical section nearly square.

Of this species but two individuals were observed: a young one at Singapore, an adult on the Great Hill of Pinang. The latter measured:

Length of the head, ...	0 ft.	$1\frac{2}{8}$ inch.
Ditto ditto trunk, ...	3	$5\frac{6}{8}$
Ditto ditto tail, ...	1	2
	4 ft.	9 inch.

Circumference of the neck, 2, of the trunk $3\frac{6}{8}$, of the root of the tail, $1\frac{1}{8}$ inch.

In its mixed arborial and terrestrial habits and in fierceness it re-

sembles *L. pictus*, but its power of compressing and expanding the forepart of the body is somewhat limited.

This species appears somewhat to approach to *Leptophis formosus*, *(Dendrophis formosa*, Schlegel,) but besides other distinguishing characters, it differs from that, and all other Asiatic species in having but 13 series of scales. The indifferent figure of *Ahætula caudolineata* in *Illustrations of Indian Zoology*, which appears to be all which has been published concerning this species, has led M. Schlegel to suppose it was intended to represent a Variety of *Leptophis pictus*, although the black outline of the head is correct.

Leptophis ornatus, (Shaw.)

Syn.—Scheuchzer, T. 606.
Seba, I. T. 94, Fig. 7.—II. T. 7, Fig. 1; T. 61, Fig. 2.
Russell, II. Pl. 2, Kalla Jin.
Coluber ornatus, Shaw.
Coluber ibiboboca, Daudin.
Coluber ornatus, Merrem, apud Horsfield: Life of Raffles.
Chrysopelea paradisi, H. Boie.
Dendrophis ornata, Schlegel.

Habit.—Bengal, Ceylon.

Var.

Syn.—Ular Chindi, Raffles.
Dendrophis chrysochloros, Reinwardt, (young.)

Head above intense velvety black, with three or four distant transversal bands, and numerous irregular spots of gamboge or sulphur colour; all the scales with an oval gamboge spot; from the hind head to the point of the tail a number of large rounded vermilion spots; lips, throat and abdominal surface greenish-gamboge, scuta and scutella with black margins. Iris and tongue black.

Scuta 198 to 236. Scutella 113 to 147.

Young. Head, trunk and tail above greenish olive, with a series of transversal black bands in pairs; the intervals between the bands vermilion; the sides with numerous distant, irregular, small black spots; lateral part of the scuta and scutella white, the ridge and the anterior margin black; the centre part pale greenish yellow; scutella partially edged with black, and with a central light blue line. Tongue vermilion, the forked part black.

Habit.—*Pinang, Malayan Peninsula.*
Java, Sumatra, Tenasserim, Arracan.

The Variety, in which the black colour prevails, appears to be confined to the more southern countries, while that with yellow ground colour preponderating, the one described and figured by Russell, occurs in Bengal. The latter has the tongue alternately vermilion and black. Individuals without the frenal shield are not uncommon, and such was the one described by H. Boie as a distinct species (*Chrysopelea paradisi.*) It inhabits the Malayan hills and valleys, but is there apparently less numerous than in Bengal. The largest male observed was of the following dimensions :

Length of the head, ...	0 ft.	$1\frac{1}{8}$ inch.
Ditto ditto trunk, ...	2	$7\frac{6}{8}$
Ditto ditto tail, ...	0	$11\frac{4}{8}$
	3 ft.	$8\frac{3}{8}$ inch.

Circumference of the neck, $1\frac{1}{8}$, of the trunk, $1\frac{7}{8}$, of the root of the tail, $\frac{7}{8}$ inch.

The trunk is covered by 17 longitudinal series of smooth, imbricate rhomboidal scales, with rounded points. It is but seldom seen in trees ; it is more frequently found on the ground in the grass, watching for its prey : lizards (*Geckonidæ,**) and frogs. The female has 6 to 8 white, elongated cylindrical eggs, about $1\frac{2}{8}$ inch in length. It differs from the other species in its being deprived of the power of compressing, and expanding the anterior part of the body, and in its gentleness. The young ones never attempt to bite, the adult but seldom, and without raising vertically the anterior part of the body. In the latter the four anterior teeth of the lower jaw are a little longer than the rest, which are uniformly small.

AQUATIC.

Gen. Tropidonotus, *Kuhl.*

Head oblong ovate, rather indistinct, depressed ; nostrils between the sutures of two shields ; eyes moderate, with circular pupil, scales of the back lanceolate ovate, keeled, imbricate ; trunk elongated, cylindrical, tail moderately long, tapering.

* Vide *Ptychozoon homalocephalum*, supra.

TROPIDONOTUS UMBRATUS, (Daudin,) VAR.

SYN.—Tropidonotus trianguligerus, Schlegel.

Above shining brownish, or yellowish green olive; lips gamboge with a black oblique line between the sixth and seventh labials, a second from the orbit to the angle of the mouth; a third from the under lip to the upper part of the neck; trunk and tail with numerous black spots, in some very minute, irregular, in others larger, approaching to quincunx order; the sides with numbers of large square or triangular scarlet spots, separated from each other by broader or narrower black vertical bands. Scuta and Scutella gamboge with black margins, the latter with a black central line. Iris black with a narrow golden circle; tongue black.

Scuta 121 to 130, Scutella 76 to 84.

HABIT.—*Malayan Peninsula and Islands.*
Java, Bengal.

The vertical and supra-orbital shields are of an elongated narrow form; the anterior frontals triangular, longer than broad; the nostrils small, placed high on the sides, the frenal is elongated pentagonal, with the largest margin touching the præ-orbital. Of the three post-orbitals the lowest is the longest, wedged in between the fifth, sixth, and seventh upper labials, of which the fifth is the only one which reaches the orbit; the eye is moderate, prominent; the upper labials are 9, the lower 11 on each side. The mouth is very large, the teeth small, crowded, except the two last of the upper jaw, which are longer than the rest. The trunk is slightly compressed, covered by 19 longitudinal series of scales, of which the two lowest are broad rhombic, the rest elongated rhomboidal with rounded points, those of the back lineated. The abdomen is broad arched. This Variety differs in nothing but colours from *Tropidonotus umbratus*,* (Daudin), and to judge by the description of M. Schlegel, it appears to be identical with *T. trianguligerus*. In the Malayan valleys the Variety is very numerous; in Bengal it is less so, but there the species abounds in and near fresh water, where it preys upon fishes and frogs. The Variety attains to a

* Syn. Russell, II. Pl. 3. *Dooblee*, young.—Pl. 5. *Dora*, adult.—*Col. umbratus*, Daudin.—*Col. dora*, Daud.—*Col. brunneus*, Herrman.—*Col. atratus*, Herrm.—*Col. lugubris*, Merrem.—*Tropidonotus umbratus*, Schlegel.—*Tropidonotus dora*, apud Cantor.

size similar to that of the species, both of which are equally fierce. The largest individual was of the following dimensions:

Length of the head, ...	0 ft.	$1\frac{2}{8}$ inch.
Ditto ditto trunk, ...	1	$9\frac{5}{8}$
Ditto ditto tail, ...	0	$9\frac{3}{8}$
	2 ft.	$8\frac{2}{8}$ inch.

Circumference of the neck, 2, of the trunk, $2\frac{5}{8}$, of the root of the tail, $1\frac{5}{8}$ inch.

TROPIDONOTUS STOLATUS, (Linné.)

SYN.—Seba, II, Tab. 9, Fig. 1, 2.
Coluber stolatus, Linné.
Le Chayque, Daubenton, Lacépède.
Russell, I, Pl. 10, 11, 19.
La vipère chayque, Latreille.
Coluber stolatus, Lin., apud Shaw, Daudin.
Coluber tæniolatus, Daudin.
Natrix stolatus, Merrem.
Tropidonotus stolatus, Gray, Schlegel.

Head shining brownish olive with several black spots in the sutures of the shields: lips gamboge with several black oblique streaks; head and trunk brownish olive with numerous distant black transversal bands, becoming indistinct towards the tail, and intersected by two parallel bands of a pale ochre or buff, the scales of which on the anterior part of the body edged with black. Beneath gamboge or mother-of-pearl; in some the scuta with a small lateral black spot, or edged with black. Iris black with a narrow golden ring; tongue black.

Scuta 143 to 156, Scutella 69 to 79.

HABIT.—*Pinang, Malayan Peninsula.*

Philippines, Tenasserim, Bengal, Assam, Nipal, Coromandel, Ceylon, Bombay.

This species, so exceedingly numerous in Bengal, is but rarely seen in the Malayan valleys. It is of very gentle habits, and feeds upon young frogs and toads. The largest male observed was of the following dimensions:

Length of the head, ...	0 ft.	$0\frac{7}{8}$ inch.
Ditto ditto trunk, ...	1	$4\frac{2}{8}$
Ditto ditto tail, ...	0	$5\frac{1}{8}$
	1 ft.	$10\frac{2}{8}$ inch.

Circumference of the neck, $\frac{7}{8}$, of the trunk, $1\frac{3}{8}$, of the root of the tail, $\frac{6}{8}$ inch.

The female has 6 small cylindrical white eggs, each about half an inch in length.

Tropidonotus schistosus, (Daudin.)

Syn.—Russell II. Pl. 4. Chittee.
Coluber schistosus, Daudin.
Tropidonotus schistosus, Schlegel.
Tropidonotus nioestus, Cantor.

Above blackish olive, some with an indistinct blackish line from behind the eye along the side; the lips, the two lowest series of scales on each side, and the abdominal surface whitish yellow. Iris black with a narrow golden ring; tongue small, flesh coloured.

Scuta 138, Scutella 77.

Var.

Syn.—Tropidonotus surgens, Cantor.
Above bright greenish olive, with a black serrated lateral line.
Scuta 148, Scutella 23.

Habit.—*Malayan Peninsula,*

Philippines, Tenassarim, Bengal, Madagascar.

The shields of the head are short; there is but a single anterior frontal, of a triangular shape, truncated in front; the frontals are small pentagonal; the nasals nearly equal to the latter; the small semicircular nostrils almost vertical and appearing linear as they are provided with a valvule as in *Homalopsis;* from the lower part of the nostril a minute arched groove descends to the inferior margin of the shield; the frenal is small; the præ-orbital in length nearly equals the three postorbitals. The scales of the trunk are disposed in 17 longitudinal series, of which the two lowest on each side are hexagonal, each scale with a minute round protuberance near the apex; the scales of the next two series present a raised line terminating in a protuberance, but the remaining scales are elongated rhomboidal with truncated, slightly notched points, keeled, imbricate. These marks become indistinct when the integuments are about to be changed, which probably caused them to escape the notice of Russell. This species is not numerous in Bengal, and apparently less so on the Malayan Peninsula. The largest individual measured,

Length of the head, ...	0 ft.	1 inch.
Ditto ditto trunk, ...	2	$0\frac{4}{8}$
Ditto ditto tail, ...	0	$2\frac{4}{8}$
	2 ft.	4 inch.

Circumference of the neck : $1\frac{6}{8}$, of the trunk : $2\frac{4}{8}$, of the tail $1\frac{5}{8}$ in.

The length of the tail is very variable : in some it is contained $3\frac{1}{2}$, in other 6 times in the entire length. This species is very fierce, and prepares to attack by raising the head 3 or 4 inches vertically from the ground, and it has the power of flattening and laterally expanding the skin of the anterior part of the body, like *Naja*, but in a much slighter degree. It bites uttering a faint hissing sound. Frogs and fishes form its food.

Tropidonotus cerasogaster.

Syn.—Psammophis cerasogaster, Cantor.

Above yellowish brown with pale golden reflections ; lighter on the sides, the scales of which in some partially edged with yellow ; cheeks, lips, throat and abdominal surface cherry-coloured, with a bright yellow lateral line from the muzzle to the point of the tail. Iris and tongue cherry-coloured.

Scuta 144 to 149, Scutella 60 to 69.

Habit.—*Malayan Peninsula.*

Bengal, Assam.

The head is elongated, depressed ; sides angular, compressed ; muzzle truncated ; rostral broad, hexagonal, nearly vertical, arched below ; the anterior frontals the smallest, next to them the frontals ; the rest of the crown-shields are narrow, elongated ; each occipital bordered by two pairs of elongated temporals, below which three smaller. Nasals rectangular, placed at a right angle with the anterior frontals ; nostrils moderate, lateral ; the frenal smaller than the nasal ; præ-orbital longer than either ; the eye moderate, prominent. Besides three post-orbitals, there is a minute infra-orbital wedged in between the fifth and sixth upper labials, of which but a small portion of the sixth touches the orbit below. The lips are straight, turned up near their commissure, covered with 8 or 9 pair of upper, 10 lower shields. The mouth is large ; the teeth small, crowded, of equal length. The trunk is cylindrical, compressed, covered with 19 longitudinal series of imbricate, elon-

gated rhomboidal scales with rounded, slightly notched points, keeled except the two lowest series on each side, which are larger than the rest, rhombic, smooth. The abdomen is broad, arched; the tail robust at the root, cylindrical, tapering to a sharp point. A solitary individual from Province Wellesley was of the following dimensions:

Length of the head, ...	0 ft.	$0\frac{7}{8}$ inch.
Ditto ditto trunk, ...	1	$5\frac{7}{8}$
Ditto ditto tail, ...	0	$6\frac{1}{8}$
	2 ft.	$0\frac{7}{8}$ inch.

Circumference of the neck, $\frac{7}{8}$, of the trunk, $1\frac{4}{8}$, of the root of the tail, $\frac{7}{8}$ inch.

In Bengal this species is not numerous. It is very fierce, attacks in a vertical attitude, but without expanding the anterior part of the body. Its food is that of the preceding. The elongated angular head makes this species resemble a *Psammophis*.

TROPIDONOTUS JUNCEUS, N. S.

Head above shining light brown, lips and throat gamboge; from the angle of the mouth an oblique gamboge band, both joining under a sharp angle on the neck; trunk and tail dull greyish olive, with a series of distant rounded whitish spots on each side; each scutum and scutellum with a small black spot on the sides, which as well as their anterior margins are minutely dotted with brown. Iris black with a golden ring; tongue small, greyish.

Scuta 157, Scutella 88.

HABIT.—*Pinang.*

The head is elongated ovate, with the sides angular, compressed; the muzzle truncated; the rostral shield moderate, square, deeply arched beneath, vertically fixed; the anterior frontals small, tetragonal; the frontals larger, angularly bent over the side, where they border the small square frenal; the other crown shields are rather small, the occipitals on each side bordered by small elongated shields, like the rest of the temples; the eyes large, prominent; præ-orbital one; post-orbitals three; nasal rectangular; nostrils lateral, large, rounded; upper labials 9, of which the fourth, fifth and sixth border the orbit; lower labials 11; mentals two pairs, elongated. The lips are slightly arched, the mouth wide; the teeth small, crowded; the last upper

maxillary tooth longer than the rest. The trunk is very slender, cylindrical, with the centre of the back raised, forming a sharp ridge, the sides bulging near the abdomen, which is arched. The scales are imbricate, very elongated rhomboidal with the apex notched, except the two lowest series on each side, which are broad rhombic; they are all sharply keeled, and disposed on the anterior part of the trunk in 19, on the middle part in 17 longitudinal series. The tail elongated, cylindrical, very slender, tapering to a fine point. A single individual observed on the Great Hill of Pinang by W. T. Lewis, Esq. was of the following dimensions:

Length of the head, ...	0 ft.	$0\frac{6}{8}$ inch.
Ditto ditto trunk, ...	1	7
Ditto ditto tail, ...	0	$7\frac{3}{8}$
	2 ft.	$3\frac{1}{8}$ inch.

Circumference of the neck, $\frac{7}{8}$, of the trunk, $1\frac{1}{8}$, of the root of the tail, $\frac{7}{8}$ inch.

Like most of the Asiatic species of this genus, the present is of fierce habits. It twice unprovokedly bit a wood cutter who happened to pass it. The bite, of course, was productive of no consequences except a slight momentary pain. The very slender make and the elongated tail are characters which approach this species to the arborial *Colubridæ*.

GEN. HOMALOPSIS, *apud Schlegel.*

(*Erpeton*, Lacépède, 1803.—*Rhinopirus*, Merrem, 1820.—*Pseuderyx*, Fitzinger, 1826.—*Homalopsis*, Kuhl, 1827.—*Cerberus*, Cuvier, 1829.—*Hypsirhina*, Wagler, 1830.—*Hydrops*, Wagler, 1830.—*Helicops*, Wagler, 1830.—*Potamophis*, Cantor, 1836.)

Homalopsis, Kuhl. Nostrils opening vertically in the centre of the small nasals, with a valvule; crown shields small; dorsal scales imbricate, keeled; chin with many small shields, throat scaly; labials narrow; abdomen with scuta; tail short, tapering to a sharp point; beneath with scutella.

HOMALOPSIS RHINCHOPS, (Schneider.)

SYN.—Seba, II. T. 15. F. 3.
Hydrus rhinchops, Schneider.
Russell, I. Pl. 17. Karoo Bokadam.
Russell, II. Pl. 40, (young.)
Boa moluroides, Schneider.

Elaps boæformis, Schneider.
Enhydrus rhynchops, Latreille.
Hydrus cinereus, Shaw.
Hurria schneideriana, Daudin.
Coluber schneiderianus, Daudin.
Coluber cerberus, Daudin.
Python rhynchops, Merrem.
Python elapiformis, Merrem.
Python molurus, Merrem.
Coluber obtusatus, Reinwardt.
Cerberus (Homalopsis obtusatus), Cuvier.
Homalopsis schneiderii, Schlegel.
Cerberus cinereus, Cantor.

Young. Ash-coloured above, the head with black irregular spots and a short black line behind the eyes; trunk and tail with numerous distant black transversal bands; lips and throat white, dotted with black; the three or four lowest series of lateral scales white; beneath white with a black undulating band, frequently interrupted.

Adult.—Ash, lead-coloured or blackish grey with the black marks indistinct or invisible. Iris black; pupil elliptical, vertically contracted by the light; tongue very small, pale greyish.

Scuta 143 to 156, Scutella 49 to 72.

Habit.—*Malayan Peninsula and Islands.*

New Guinea, Amboina, Timor, Sarapua, Java, Sumatra, Tenasserim, Bengal, Coromandel.

The shields of the upper part of the head, which appear to be of a constant form, are the nasals, the frontals, which enclose the small pair of triangular anterior frontals, (sometimes soldered together,) and the supra-orbitals. The rest are broken up in small, irregular, smooth pieces, differing in outline in each individual. The small eye, placed in a partly vertical, partly lateral position, is surrounded by a præ-orbital a post-orbital and two or three infra-orbitals. The frenal is comparatively, large, irregularly tetragonal. The anterior seven upper labials are narrow, very high; the posterior five or six each divided in two. A similar arrangement is observed in the inferior 13 or 14 of which the posterior 6 or 7 are very small. On the chin there is a pair of elongated shields immediately behind the 2 pair of labials. The posterior upper maxillary tooth is longer than the rest, and furrowed. The three anterior teeth in the lower jaw are longer than the rest. The trunk is covered with imbricate, finely lineated and keeled scales, of a rhom-

boidal form with rounded points, disposed on the anterior part in 25, on the posterior part in 17, longitudinal series. The tail is robust, tapering, and prehensile. In the Malayan countries this species occurs in numbers in rivers, estuaries, and occasionally along the sea coasts. It feeds upon fishes. Single individuals measuring between 3 and 4 feet in length, are of very rare occurrence. Of a great number the largest was of the following dimensions :

Length of the head, ...	0 ft.	$1\frac{2}{8}$ inch.
Ditto ditto trunk, ...	2	3
Ditto ditto tail, ...	0	7
	2 ft.	$11\frac{2}{8}$ inch.

Circumference of the neck, $1\frac{7}{8}$, of the trunk, $3\frac{3}{8}$, of the root of the tail, $1\frac{6}{8}$ inch. It is of peaceful habits ; the female brings forth 8 living young, each of which measures from 7 to $7\frac{1}{2}$ inches in length.

Homalopsis buccata, (Linné.)

Syn.—Scheuchzer, Pl. 660, Fig. 1, (young.)
Seba, II. Tab. 12. F. 1 ;—T. 13, F. 1 ;—T. 21, F. 3, (young.)
Coluber buccatus, Linné,
Coluber monilis, Linné.
Coluber subalbidus, Boddaert, apud Gmelin.
Le Demicollier, Lacépède.
Vipernkopfige Natter, Merrem.
Coluber buccatus, apud Shaw.
Russell, II, Pl. 33, (young.)
Coluber viperinus, Shaw.
Coluber buccatus, Daudin.
Coluber horridus, Daudin.
Echidna semifasciata, Merrem.
Homalopsis buccata, Schlegel.

Young. Ground colour, white or buff, becoming brownish on the crown shields, hindhead and lips ; on the muzzle an angular mark, with the apex between the frontals, Van Dyke brown or chestnut ; an oblique streak proceeds from the eye over the cheek, joining a broad cervical band, which, sending a narrow straight line to the occipitals, gives the upper part of the head a heart-shaped outline ; the back and tail with numerous broad transversal brown bands, between which the ground colour appears in the shape of white, often interrupted, narrower bands, and of a white spot in the centre and on each side of the brown bands. The latter reach but as far as the lowest four or five series of scales on the sides, which as well as the throat and abdomen are white ; on each

side of every third or fourth scutum a brown spot; scutella black, or white, closely spotted with black.

Adult. The livery of the young indistinct: the ground colour of the upper parts pale greyish brown or olive; the bands of a darker shade of the same colour, edged with black; sides and beneath impure buff, the brown marks pale. Pupil black, elliptical, vertically closed by the light; tongue small whitish.

Scuta 155 to 167, Scutella 73 to 89.

HABIT.—*Pinang, Malayan Peninsula.*
Java.

From the small, nearly vertically opening nostrils, proceeds a furrow downwards to the lower margin of the nasal. The anterior frontal is either entire and of a large rhombic shape, or consisting of two triangular shields; the frenal is elongated, rectangular, the small eye is situated more laterally than in the preceding species, and surrounded by two post-orbitals, one præ-orbital, and two infra-orbitals. The seven anterior upper labials are very high, the posterior five are double; of sixteen or seventeen lower labials, the nine anterior are the highest. The last tooth in the upper jaw is furrowed, and as well as the 3 or 4 anterior palatal and inferior maxillary teeth, longer than the rest. The folds of gingiva enveloping the teeth are very ample, and contain in addition to the fixed, numerous, 5 to 6 deep, accessory teeth. The chin is covered by four pairs of elongated scales, decreasing in length from the centre towards the labials. The scales of the trunk are rhombic, imbricate, slightly keeled and finely lineated, disposed on the anterior part in 39, on the posterior in 25 longitudinal series. The tail is robust, tapering and somewhat prehensile. The largest individual observed was of the following dimensions:

Length of the head, ...	0 ft.	$1\frac{1}{8}$ inch.
Ditto ditto trunk, ...	1	11
Ditto ditto tail, ...	0	7
	2 ft.	$7\frac{1}{8}$ inch.

Circumference of the neck, 2, of the trunk, $3\frac{4}{8}$, of the root of the tail, $1\frac{6}{8}$ inch.

In the valleys of Pinang and on the opposite continent, this species is numerous in streamlets, tanks and in the irrigated fields,

where it feeds on fishes. The young ones are very gentle, and the old but seldom bite. In their movements they are sluggish, and on dry land very awkward. The female brings forth six or eight living young at the time, each between 7 and 8 inches in length.

Hypsirhina, Wagler. Resembling *Homalopsis* in the form and situation of the nostrils, the integuments and general appearance of the head, trunk, and tail; but the dorsal scales are smooth, and the labials are square, equal; (frenal, one.)

HOMALOPSIS SIEBOLDI, Schelgel.

SYN.—Seba, II, Tab. 46, Fig. 2?

Young. Ground colour, white, which on the upper part of the head appears in the shape of two lines diverging from the muzzle over the eyes to the sides of the head. From each side of the vertical shield a line diverging towards the hind head, where it branches in two, sending a portion transversely to the throat, and another to the upper part of the neck joining under an angle that of the opposite side. On the trunk and tail the ground colour shows itself as numerous narrow, transversal bands, which on the centre are frequently interrupted and placed in quincunx series; on the sides the bands are bipartite. The intervals between the ground colour are chestnut with dark brown edges. The lips and the abdominal surface white with numerous pale brown irregular spots. Iris greyish with a transversal black bar; pupil elliptical, tongue white.*

Scuta 155, Scutella 48.

HABIT.—*Malayan Peninsula.*

Bengal.

The description is taken from a solitary young individual, which was killed in Province Wellesley. It measured,

* *Adult.*—A preserved specimen in the Museum of the Asiatic Society differs from the young in having the head above of a uniform colour, while the rest of the peculiar design is retained. The ground colour is yellowish white; the brown of the young is faded to a dull lead grey.—Scuta 156, Scutella 55.—Dimensions: head $0\frac{7}{8}$ inch: trunk 1 ft. $8\frac{2}{8}$ inch; tail $3\frac{7}{8}$ inch = 2 ft. 1 inch.—Circumference of the neck, $1\frac{5}{8}$, of the trunk, $2\frac{5}{8}$, of the root of the tail, $1\frac{2}{8}$ inch. The locality from whence this specimen was obtained, is not known: Bengal is given by M. Schlegel.

Length of the head, ...	$0\frac{4}{8}$ inch.
Ditto ditto trunk, ...	$5\frac{7}{8}$
Ditto ditto tail, ...	$1\frac{5}{8}$
	8 inches.

Circumference of the neck, $\frac{5}{8}$, of the trunk, $\frac{7}{8}$, of the root of the tail, $\frac{4}{8}$ inch.

In livery and in general appearance this species resembles *H. buccata*, from which it differs in the following particulars. Both the upper and the lower rostral shield are very small; the anterior frontals are much broader than long, each like a small transversely placed cone, surrounded by the nasal, (with a slit towards the lower margin,) the tetragonal frenal, and behind, by the frontal. The vertical in extent nearly equals each of the short occipitals. The eye is rather large, prominent, surrounded by a single elongated, arched præ-orbital and two post-orbitals, of which the inferior is the larger, bordering the fifth and sixth upper labials. Of the latter there are eight on each side: the fourth borders the eye below, the two posterior are broken up in small pieces. Of the 11 or 12 pairs of lower labials, the 4 nearest the angle of the mouth are the smallest. The chin is covered by three pairs of oval shields, of which the anterior is the largest, and by some minute scales. The mouth i small; the teeth minute, uniform, except the last upper maxillary tooth, which is the longest with a furrow on the convex margin. The back is slightly angular in the centre, much depressed; the sides bulging; the abdomen narrow. The anterior part of the trunk is covered with 29, the posterior with 19 series of small smooth, imbricate scales, all rhombic with rounded points. The tail is tapering and compressed.

Homalopsis enhydris, (Schneider.)

Syn.—Russell, I. Pl. 30. Mutta Pam, Ally Pam.
Hydrus enhydris, Schneider.
Enhydris cœrulea, Latreille.
Hydrus atroeœruleus, Shaw.
Coluber pythonissa, Daudin.
Homalopsis aer,* Boie.
Hypsirhina, Wagler.
Potamophis lushingtonii, Cantor.
Homalopsis aer, Schlegel.
Homalopsis olivaceus, Cantor.

* This specific name is singularly ill chosen, as the denomination "*ular ayer*," (water-serpent,) is applied by the Malays to all fresh water serpents. The word "*ayer*" applied to a single species is as eligible as would be "*aqua*," "*eau*" or "*wasser*."

Iridescent dark greenish-or brownish-olive above; the scales edged with black; in some two parallel light greyish lines from between the eyes to the tip of the tail; the lower half of the sides pale greenish or brownish-grey; lips and throat white, edged and dotted with black. Abdominal surface white or buff, with a greenish or brownish line on each side, and a black central line dividing the scuta and scutella. Iris greyish or pale olive; pupil circular; tongue whitish.

Young: with lighter and more strongly iridescent colours than the adult.

Scuta 148 to 167; Scutella 53 to 71.

Habit.—*Malayan Peninsula and Islands.*

Java, Tenasserim, Bengal, Coromandel.

The head is small, ovate, scarcely distinct; the nostrils are hemispherical, with a slit towards the external margin of the shield; the single anterior frontal is small, rhomboidal, much broader than long; the eye is rather large, prominent, lateral and surrounded by two rather broad post-orbitals, one or two narrow præ-orbitals, and beneath by the fourth upper labial; the frenal is small, rhombic. The external margins of the occipitals are bordered by three elongated shields, and each temple by five similar. The eight upper labials are larger than the ten lower. The chin is covered by two central pairs of elongated shields, between which and the labials is, on each side, a single very elongated shield. The mouth is small, the teeth minute, numerous and equal, except the last tooth of the upper jaw, which is longer than the rest and furrowed. The trunk is very robust, broadly depressed; the sides obliquely compressed, and the abdomen very narrow, flattened. The scales are broad rhomboidal with rounded points, slightly imbricate, and disposed on the anterior part in 25, in the middle in 21, and near the tail in 19 longitudinal series. The tail is very slender, somewhat compressed, tapering and prehensile. The largest individual was of the following dimensions:—

Length of the head, ...	0 ft.	1 inch.
Ditto ditto trunk, ...	1	$5\frac{6}{8}$
Ditto ditto tail, ...	0	$5\frac{2}{8}$
	2 ft.	

Circumference of the neck, $1\frac{2}{8}$, of the trunk, $2\frac{6}{8}$, of the root of the tail, $\frac{7}{8}$ inch.

Numbers of this species may be seen in rivers, as well as in irrigated fields and estuaries, preying upon fishes, which however it refuses in a state of captivity. It is of timid and peaceful habits. A large female, after having been confined upwards of six months in a glass vessel filled with water, brought forth eleven young ones in the manner noted above under *Acrochordus javanicus*. During the process she lay motionless on the bottom of the vessel, the anterior part of the abdomen was retracted towards the vertebral column, while the muscles of the posterior part were in activity. Shortly after the parturition she expired under a few spasmodic movements, and also two of the young ones died in the course of about two hours, after having, like the rest, shed the integuments. In length they varied from 6 inches to $6\frac{2}{8}$. The living nine presented a singular appearance : they remained a little way below the surface of the water coiling themselves round the body of an adult male, which was also kept in the vessel, occasionally lifting the heads above the surface to breathe, at the same time resisting the efforts of the senior to free himself. Fishes and aquatic insects were refused, in consequence of which the young ones expired from inanition in the course of less than two months.

Homalopsis plumbea, Boie.

Syn.—Hypsirhina, Wagler.
Hypsirhina hardwickii, Gray : Illust. Ind. Zool.
Homalopsis plumbea, Schlegel.

Iridescent dark brownish-or greyish-olive above, uniformly or with small irregular black spots ; the two or three lowest series of scales yellowish, each scale spotted or edged with brown ; lips and throat yellow ; scuta and scutella yellowish white, the former in some partially edged with black, the latter with a black central zig-zag line ; iris grey ; pupil elliptical, vertically contracted by the light ; tongue whitish.

Scuta 125 to 126 ; Scutella 36 to 44.

Habit.—*Pinang.*
Java.

The head is broad, ovate, depressed ; the muzzle blunt, the nostrils small triangular, with a slit towards the lower margin of the nasal ; the single anterior frontal broad triangular ; the rest of the crown shields are of normal form. The eye is small, placed in a half lateral half

vertical position, enclosed by two post-orbitals, one elongated præ-orbital, and beneath by the fourth upper labial; the frenal is very small, tetragonal; the upper labials eight, rather high; lower labials ten; on both jaws the shields increase in size towards the angle of the mouth. The chin is covered with two pairs of elongated shields and a few gulars. The mouth is small; the posterior upper maxillary tooth longer than the rest, furrowed, and the anterior lower maxillary teeth also exceed the following. In addition to the fixed teeth there are several accessory series. The trunk is nearly cylindrical, slightly depressed, covered with small rhombic scales, smooth, and not imbricate, disposed on the anterior part in 19, on the posterior part in 17 longitudinal series. The tail is short, conic, tapering and slightly prehensile. Two individuals, taken at different times in rivulets in the valley of Pinang, in habits resembled *H. rhinchops*. The larger was of the following dimensions:

Length of the head, ...	0 ft.	$1\frac{1}{8}$ inch.
Ditto ditto trunk, ...	1	5
Ditto ditto tail, ...	0	$2\frac{6}{8}$
	1 ft.	$8\frac{7}{8}$ inch.

Circumference of the neck, $1\frac{5}{8}$, of the trunk, $2\frac{4}{8}$, of the root of the tail, $1\frac{1}{8}$ inch.

Homalopsis leucobalia, Schlegel, Var. (See Plate XL. Fig. 5.)

Young.—Above light brownish olive, or greenish grey with single irregular distant brown spots; lips and throat whitish yellow; the lowest three or four lateral series of scales, and the abdominal surface greenish white or pearl-coloured.

Adult.—Uniformly blackish olive above, otherwise like the young. Iris dark brown; pupil elliptical, vertically contracted by the light. Tongue whitish.

Scuta 130 to 148; Scutella 26 to 37.

Habit.—*Pinang, Malayan Peninsula.*

The head is very broad, depressed, and the muzzle blunt; the rostral broad, hexagonal, very slightly arched beneath; the superior margin borders the single small elongated anterior frontal, which is of a narrow hexagonal form, broader behind, where it is wedged in between the two broad frontals. The nasals are rather large; nostrils small

crescent-shaped; the vertical very broad, short, hexagonal; occipitals large, elongated with a pair of very broad shields on each side, below which the temples are covered by three smaller shields. The eye is very small, in a half vertical position, with two post-orbitals, one præ-orbital, which extends to the large oval nasal; frenal none, or, when present, excessively minute. Of the five large upper labials, the anterior is the smallest and borders the nasal; the second the præ-orbital, the third the orbit, and the lower post-orbital, the fourth and fifth the temporals. The lower rostral is very small, triangular. The seven or eight inferior labials are much smaller than the upper. The two pairs of mentals are very short. The mouth is small; the teeth are very strong, short and of nearly equal size, except the furrowed last upper maxillary tooth and the anterior teeth of the lower jaw, which are longer than the rest. The trunk is robust, back slightly raised in the centre, the sides sloping, their lower half compressed, the abdomen broad, arched. The scales are smooth, rhombic with rounded points, slightly imbricate; those of the sides have the points bent inwards and firmly adhering to the skin, so as to appear hexagonal. On the anterior part of the trunk they are disposed in 27, on the posterior in 25 longitudinal series. The tail is short, robust, tapering and somewhat prehensile. In the male the sides are compressed, very high in the middle, and the lower surface is flattened, very broad, more so than is the posterior part of the abdomen. In the female it is shorter, the sides less high, and the lower surface less broad. The largest male of a considerable number was of the following dimensions:

Length of the head,.....	0 ft.	$0\frac{7}{8}$ inch.
Ditto ditto trunk,.....	1	$10\frac{2}{8}$
Ditto ditto tail,.....	0	$2\frac{6}{8}$
	2 ft.	$1\frac{7}{8}$ inch.

Circumference of the neck, $1\frac{7}{8}$, of the trunk, $2\frac{4}{8}$, of the root of the tail, $1\frac{4}{8}$ inch. With the exception of its colours, the present offers no difference from *H. leucobalia*, from the rivers of Timor. At Pinang it is numerous not only in fresh water and estuaries, but in the sea at some distance from the shore, where it sometimes occurs in fishing nets. It is of sluggish, not fierce habits, and feeds upon fishes and crustacea, aquatic and pelagic. In a young female the oviduct enclosed

4 white cylindrical eggs, which when they were observed contained but yolk; each measured about an inch in length.

HOMALOPSIS HYDRINA, N. S. (See Plate, Fig. 4.)

Adult.—Ash-coloured above with a few scattered black spots on the neck; the back and tail with numerous transversal black bands; the lips, sides and abdomen uniformly pearl-coloured. Iris ashy; pupil elliptical, vertically contracted by the light; tongue small, whitish.

Scuta 161; Scutella 34.

Young.—Resembling the adult, but the ash-colour of a much lighter shade.

Scuta 153; Scutella 35.

HABIT.—*Sea off Pinang, and the Malayan Peninsula.*

The head is moderately distinct, elongated, depressed, oval with rounded, blunt muzzle; the rostral shield moderate, hexagonal; its lower margin with a central minute tubercle, on each side of which a triangular impression. The upper margin of the minute triangular lower rostral presents a central cavity, and two lateral elevations fitting into the margin of the upper rostral. A similar contrivance in the pelagic serpents enables them hermetically to close the mouth. As in *H. leucobalia*, the single small anterior frontal is elongated hexagonal, broader behind, and enclosed by the rostral, the nasals, and the frontals. Although the nasals are placed laterally, the small arched linear nostrils open vertically, and send a slit to the posterior margin of the shield; the frontals are hexagonal, smaller than the latter; the vertical is the longest of the crown-shields, very narrow, hexagonal, pointed at both extremities, but broader behind; the supra-orbitals are small, narrow; the occipitals are broken up in minor shields: viz. two post-occipitals, in size equal to the occipitals, and a minute conical inter-occipital, enclosed by the four shields, with the broader extremity wedged in between the occipitals. Each temple is covered with two pairs of large shields, of which the lower borders the fifth, sixth, and seventh upper labials. The eye is very minute, prominent, almost vertically placed, surrounded by two post-orbitals, of which the lower is broad pentagonal, meeting beneath the elongated single oblique præ-orbital. Thus none of the upper labials border the orbit. The frenal is moderate, pentagonal. Of the seven upper labials the anterior three

pairs are much smaller than the rest, which suddenly become very large and deep, so as to make the margin of the lip very bulging in a downward direction. The lower ten or eleven labials are smaller than the upper, except the sixth, which is the largest. The chin with two pairs of shields of which the anterior is very elongated; the throat with numerous minute scales. The mouth is small, the dentition resembles that of *Homalopsis leucobalia, Var.* The trunk would be orbicular, but for the narrow flattened abdomen, the scuta of which are angulated, forming on each side a sharp ridge. The scales are very small, smooth, on the neck disposed in 33, successively in 37, but near the root of the tail in 29 longitudinal series. Those of the back are rhomboidal with rounded points; those of the sides lanceolate with the point bent inwards, so as to appear truncated, each scale leaving a small square interval, in which appears the naked skin. The tail is short, much compressed, tapering and slightly prehensile. In the male the sides are very high, and the lower surface very broad, as noted under *H. leucobalia, Var.* On the broadest part there are as many as 21 longitudinal series of scales. In the female this organ is shorter, the sides less high, and the abdomen less broad.

Of three individuals observed, two were captured in fishing stakes placed in the sea off the shores of Keddah, a third was washed on shore by the waves on the coast adjoining my house at Pinang. The largest male was of the following dimensions:

Length of the head, ...	0 ft.	$0\frac{5}{8}$ inch.
Ditto ditto trunk, ...	1	$4\frac{4}{8}$
Ditto ditto tail, ...	0	$2\frac{3}{8}$
	1 ft.	$7\frac{3}{8}$ inch.

Circumference of the neck, $\frac{6}{8}$, of the trunk, $1\frac{6}{8}$, of the root of the tail, $\frac{7}{8}$, of the middle of the tail, 1; two eighths from the apex, $\frac{3}{8}$ inch.

It moved actively and without difficulty on the sand, and did not offer to bite. In one examined the stomach contained remains of two small pelagic fishes. In general appearance and colours the present is more closely allied to the pelagic serpents than any other known species. Whether it exclusively inhabits the sea, or, like *Homalopsis rhinchops, enhydrus*, and *leucobalia*, as an occasional visitor, must be a matter of future investigation.

VENOMOUS SERPENTS.

FAM. VIPERIDÆ, Bonaparte.

Sub-Fam. Bungarinæ, *Bonaparte.*

TERRESTRIAL.

Gen. Elaps, *Schneider.*

Head more or less indistinct, neck not dilatable; mouth and eyes small, trunk elongated, throughout of nearly equal circumference, very smooth; tail short, tapering, beneath with scutella.

Elaps melanurus, (Shaw.) (See Plate XL, Fig. 6.)

Syn.—Russell I. Pl. 8. (young).
Coluber melanurus, Shaw, (young.)
Vipera trimaculata, Daudin, (young.)
Elaps trimaculatus, Merrem, apud { Wagler, Schlegel, } (Young.)

Strongly iridescent light bay above; from the muzzle a longitudinal black band, joining on the neck a broader transversal black band with whitish edges; a short oblique black line behind the eye, and a similar from the nostril to the middle of the upper lip; on each side of the anterior part of the back a series of distant black dots; a broad black transversal band with whitish edges, at the root of the tail; a second similar, at a short distance from the apex; lips, throat and the anterior part of the abdomen iridescent yellowish white, changing to yellow or orange on the posterior part; the tail beneath bluish white, with large irregular black spots. Iris black; pupil circular; tongue black.

Scuta 205 to 247; Scutella 24 to 32.

Habit.—*Malayan Peninsula.*
Tenasserim, Nerva, (Coromandel.)

In general appearance this species nearest approaches *Elaps intestinalis*, (Laurenti), but the eye is comparatively larger, while the nearly equilateral, hexagonal, vertical shield is smaller in the present. The eye is surrounded by two post-orbitals, one præ-orbital, and beneath by the third and fourth upper labials. Of the latter seven pairs cover the jaws. The trunk is throughout covered by 13 series of smooth, sub-imbricate, rhombic scales. The one described by Russell, hitherto the only describer from nature, was a young animal. A similar, upwards of a foot in length, was killed in Province Wellesley. But the late Mr. Griffith in one of his botanical excursions, captured an individual of the following dimensions:

Length of the head, ...	0 ft.	$0\frac{5}{8}$ inch.
Ditto ditto trunk, ...	1	$10\frac{2}{8}$
Ditto ditto tail, ...	0	$1\frac{4}{8}$
	2 ft.	$0\frac{3}{8}$ inch.

Circumference of the trunk 1 inch.

ELAPS INTESTINALIS,* (Laurenti,) VAR.

SYN.—Maticora lineata, Gray: Ill. Ind. Zool.
Elaps furcatus, Schneider, Var. apud Schlegel, Cantor.

Young and Adult.—Head above light chestnut; lips and throat yellowish white, upper lips spotted with black; from the hindhead to the tip of the tail a vermilion line, on each side of which a narrow, serrated, black line. On the nearest two longitudinal series of scales the ground colour appears as a reddish light grey longitudinal line, beneath bordered by an equally broad black line, under which a narrow buff-coloured line, bordered by a black serrated line, the teeth of which are directed downwards, wedged in between the lateral margins of the scuta and scutella. Scuta alternately pale citrine and iridescent black, the latter colour occupying three to four scuta together, while the former rarely appears on more than two. Tail above with two or three distant black transversal bands; beneath vermilion, with a continuation of the superior transversal bands. Iris black, pupil circular; tongue black.

Scuta 223 to 238; Scutella 24 to 26.

HABIT.—*Pinang, Singapore, Malayan Peninsula.*
Sumatra.

Excepting the colours, this variety otherwise perfectly agrees with *E. intestinalis*. The neck is covered by 15, the rest of the trunk by 13 longitudinal series of smooth, not imbricate rhombic scales. It is of no uncommon occurrence in the hills of Pinang, at Malacca, and at Singapore. The largest individual was of the following dimensions:

Length of the head, ...	0 ft.	$0\frac{3}{8}$ inch.
Ditto ditto trunk, ...	1	10
Ditto ditto tail, ...	0	$1\frac{4}{8}$
	1 ft.	$11\frac{7}{8}$ inch.

Circumference of the trunk $1\frac{2}{8}$ inch.

* SYN. Seba II, Pl. 2, Fig. 7.—*Aspis intestinalis*, Laurenti—*Coluber intestinalis*, Gmelin.—Russell II, Pl. 19.—*Elaps furcatus*, Schneider.—*Coluber intestinalis*, Shaw.—*Vipera furcata*, Daudin.—*Elaps furcatus*, Schneider, apud Wagler, Schlegel.
HABIT.—Java, Malwah, (Central India.)
A collection of Reptiles, which Mr. J. W. Grant obtained from Saugor, Malwah, contained a single specimen.

ELAPS NIGROMACULATUS, Cantor. (See Plate XL, Fig. 7.)

SYN.—Calliophis gracilis, Gray: Ill. Ind. Zool. (Young.)
"Probablement nouvelle espece d'Elaps," Schlegel: Essay, p. 451. (1*)
Elaps nigromaculatus, Cantor: Spicil.

Head above yellowish brown, each shield with a pale black spot in the middle; lips and throat yellowish white, spotted with pale black. Ground colour of the trunk and tail reddish light grey, longitudinally divided by a central black line with small round, black, white-edged spots about an inch apart; on each side two parallel black lines, the lower of which bordering the two lowest series of scales of the sides, which are white edged with black, so as to appear longitudinally intersected by two black lines. All the lateral black and white lines are on each side intersected by a series of large rounded (the anterior pair elongated), black spots with white edges, placed in pairs, opposite each other, but in quincunx order with the smaller black spots of the dorsal line. Beneath alternately yellowish white or pale citrine, and iridescent black, both colours nearly equally divided. Tail at the root, and near the apex with a broad transversal black band, edged with white, both continued on the vermilion lower surface, and there, between them, a third similar band. Iris black, pupil round; tongue bluish grey.

Young.—Marked like the adult, but the ground-colour of the back and tail inclines to light reddish brown.

Scuta 238 to 311; Scutella 21 to 28.

HABIT.—*Pinang, Singapore.*

In general appearance this species very closely resembles *Elaps intestinalis*, from which it is distinguished by the following characters.* The two pairs of frontal shields are remarkably disproportionate, the frontals (proper) being much the larger: next to the occipitals they are the largest of the crown-shields. The nearly equilateral, hexagonal vertical, and the supra-orbitals are remarkably small: more so than in any other species of this genus. The occipitals are very narrow elongated; their external margin bordered by two pairs of shields of which the anterior, the larger, covers the temples, and is beneath bounded by

* The (magnified?) representation of the head of "*Calliophis gracilis*," Fig. 2. *Ill. Ind. Zool*, is in every particular incorrect.

the fifth and sixth upper labials. The eye is sunk, excessively minute, surrounded by two small post-orbitals; beneath by the third and fourth upper labials, and by a single narrow triangular præ-orbital. The latter is placed obliquely, so that the downwards pointed apex meets the linear posterior part of the nasal, or as it is considered by some, the frenal. The nostrils are comparatively large. The upper labials number six on each side: the two posterior are the largest. The chin is covered by two pairs of elongated narrow shields, externally bordered by the third and fourth, the largest of the six inferior labials. The gular scales are more numerous than those of *E. intestinalis*. The neck is covered by 15, the trunk by 13 longitudinal series of smooth rhombic scales with rounded points. This species is of no uncommon occurrence in the hills of Pinang. The largest individual was of the following dimensions:

Length of the head, ...	0 ft.	$0\frac{4}{8}$ inch.
Ditto ditto trunk, ...	2	$1\frac{3}{8}$
Ditto ditto tail, ...	0	$1\frac{3}{8}$
	2 ft.	$3\frac{2}{8}$ inch.

Circumference of the trunk, 1 inch.

Elaps bivirgatus,* Kuhl, Var.

Syn.—Elaps flaviceps, Cantor, Spicil.
Elaps flaviceps, apud J. Reinhardt: Beskrivelse, &c.

Head, lips and throat vermilion; trunk above brilliant iridescent, intense black, most of the scales partially edged with azure, not however sufficiently to produce regular network; the two lowest series of scales on each side azure, forming a continued lateral band, longitudinally divided by a white zig-zag line, produced by the scales being partially edged with white. Beneath vermilion; each scutum with two lateral, square, black spots, forming a continued black band bordering the azure. Tail above with a narrow black dorsal line; sides and scutella vermilion. Iris and tongue black.

Scuta 248 to 277; Scutella 38 to 45.

* Syn.—*Erpetologie de Java*. Pl. 44.—*Elaps bivirgatus*, apud Schlegel.
Habit.—Java, Sumatra.

Habit.—*Pinang, Malayan Peninsula.*

In colours the young ones resemble the adult. The neck is covered by 15, the trunk by 13 longitudinal series of smooth rhomboidal scales. The anterior part of larynx, instead of adhering to the upper part of the membranous sheath enclosing the tongue, presents the peculiarity of being free and projecting in the mouth like a small tube.

Of four individuals observed, the three were from the hills of Pinang. The largest was of the following dimensions:

Length of the head, ...	0 ft.	$0\frac{5}{8}$ inch.
Ditto ditto trunk, ...	2	$7\frac{6}{8}$
Ditto ditto tail, ...	0	$3\frac{2}{8}$
	2 ft.	$11\frac{5}{8}$ inch.

Circumference of the trunk, $1\frac{4}{8}$ inch.

Elaps intestinalis, Var, E. nigromaculatus, and *bivirgatus, Var,* appear at Pinang exclusively to inhabit the hills at a considerable elevation, but on the Malayan Peninsula, and at Singapore they occur in the valleys. Although not numerous, they cannot be said to be of rare occurrence. They are strictly terrestrial, and have their hiding places under the roots of trees, and in the crevices of rocks. They are sluggish, awkwardly dragging their long slender bodies, and they are generally observed lying motionless, with the body thrown in many irregular folds, but not coiled. Although they are diurnal, their sight from the minuteness of the pupil, appears to be as defective as their sense of hearing, and they may be closely approached, without apparently their being aware of danger. If touched with a stick, they make a few strenuous efforts to slide away, but they soon stop, and if further pursued, they make some irregular spasmodic-like movements, but they have not been observed to bite. An adult *Elaps bivirgatus, Var,* was on a single occasion seen to raise the head vertically about two inches from the ground. In captivity they refuse food and water, and die in a short time from inanition. Of a number examined, only one of the latter species had in the stomach the remains of a small serpent, the genus of which could not be determined. M. Schlegel has observed *Calamariæ* in the stomach of *Elaps intestinalis.* In the peculiar dis-

tribution of colours, in diminutive size, and in habits they resemble the genus *Calamaria*. It is solely the smallness of the mouth which renders the preceding species of *Elaps* harmless to man, as from the following it will be perceived, that their venom is as virulent as that of other venomous serpents. From the diminutive size of the venomous glands, the quantity of fluid secreted is small: scarcely more than a drop from each. It is a pellucid, colourless fluid, slightly reddening litmus paper.

After several unsuccessful attempts to make an adult *Elaps nigromaculatus* spontaneously bite a fowl, the jaws were forcibly closed over a protracted fold of the skin on the inner side of the left thigh of the bird. On account of the small gape, some difficulty was experienced in making the jaws close over the fold of the skin, and, as it appeared doubtful if the fangs had penetrated, the serpent was in a quarter of an hour compelled again to wound the fowl in the skin below the right eye. Twenty minutes after the first wound the fowl became purged, and manifested symptoms of pain in the left thigh, which was continually drawn up towards the body, although the wounds inflicted there, and below the eye, were, from the smallness of the fangs, barely visible. Twenty eight minutes after the first wound the bird commenced drooping, occasionally attempting to raise itself, and in 10 minutes more soporism occurred, interrupted by spasms of the neck, flow of saliva, and pecking the earth with the beak, while the pupil was spasmodically contracted, and alternately dilated. The latter symptoms continued during thirty minutes, when death occurred in an hour after the first wound had been inflicted. Fowls wounded by *Elaps furcatus*, *Var*, and *Elaps bivirgatus*, *Var*, expired under similar symptoms, from within an our and twenty minutes, to upwards of three hours. The serpents which all had forcibly to be made to inflict the wounds, shortly afterwards expired, apparently from the violence to which they had been subjected.

Gen. Bungarus, *Daudin*.

Body elongated, slightly cylindrical; tail short; head oval, trunk and tail with a dorsal series of large hexagonal scales; the tail beneath with scuta, in the middle sometimes with scutella; behind the fangs some simple maxillary teeth.

Bungarus flaviceps, J. Reinhardt.

Young.—Head and neck blood-red, with a pointed elongated black mark between the occipitals, and a short black dorsal line on the neck; the trunk black with steel-blue reflections, at the anterior part of each dorsal hexagonal scale a short longitudinal white streak; near the tail blood-red; each scale of the two lowest lateral series, white with a black spot, placed so as to produce a continued lateral, white zig-zag line; the posterior part of the sides blood-red. Lips and throat blood-red; abdomen black, posterior part as well as the tail blood-red, with a few black spots. Iris and tongue black.

Scuta abdominalia 209, Scuta sub-caudalia 16; Scutella 38.

Habit.—*Pinang.*

Java.

M. J. Reinhardt has described the adult from an unique specimen in the Royal Museum, Copenhagen. Spirits of wine change the brilliant blood-red to a pale yellow colour. The diagnosis must therefore be altered accordingly. The adult appears to differ from the young, in having none of the black marks of the head and tail, and no lateral white line.

A single young individual, found by Sir William Norris, on the Great Hill of Pinang, was of the following dimensions:

Length of the head, ...	0 ft.	$0\frac{5}{8}$ inch.
Ditto ditto trunk,.....	1	$4\frac{4}{8}$
Ditto ditto tail,.....	0	3
	1 ft.	$8\frac{1}{8}$ inch.

Circumference of the neck 1, of the trunk $1\frac{2}{8}$, of the root of the tail $\frac{5}{8}$ inch.

The centre of the back forms a ridge, from whence the sides slope; the abdomen is broad, slightly arched, so that the vertical section of the body becomes broad triangular. The neck is covered by 15, the trunk by 13 longitudinal series of smooth, imbricate, rhomboidal scales. As observed by M. J. Reinhardt, the correspondence of colours, and their distribution, between this species and *Elaps bivirgatus* is very striking. Besides, the number of series of scales, is another character, approximating this species to the genus *Elaps*.

Bungarus candidus, (Linné.)

Syn.—Seba II, T. 66, Figs. 3 and 4.
Coluber candidus, Linné.
Russell I, Pl. 1. Paragoodoo.
Russell II, Pl. 31. Sew Walaley.
Pseudoboa cœrulea, Schneider.
Boa lineata, Shaw.
Bungarus cœruleus, Daudin.
Bungarus semifasciatus, Kuhl.
Aspidoclonion semifasciatum, Wagler.
Bungarus semifasciatus, Schlegel.

Above black with steel blue reflections, interrupted by numerous narrow transversal white bands, produced by the white edges of the scales. On each side the bands are bifurcated, and the two or three lowest series of scales, white with black spots. Lips and throat white; abdominal surface yellowish white. Iris black; tongue white.

Scuta 201 to 221; Scuta sub-caudalia 38 to 56.

Habit.—*Malayan Peninsula.*

Java, Tenasserim, Bengal, Assam, Coromandel, Ceylon, Malabar.

A single young individual, killed by Capt. Congalton near Keddah, was of the following dimensions:

Length of the head,.....	0 ft.	1 inch.
Ditto ditto trunk, ...	2	$3\frac{6}{8}$
Ditto ditto tail, ...	0	$4\frac{5}{8}$
	2 ft.	$9\frac{3}{8}$ inch.

Circumference of the neck $1\frac{6}{8}$, of the trunk 2, of the root of the tail $1\frac{1}{8}$ inch.

Assam produces also a constant variety (*B. lividus*, Cantor) of a uniform blue black above; beneath yellowish white: in some the scuta blackish with white edges. In the very young the head is white with a black line between the occipital shields. It farther differs in having the hexagonal scales smaller, less distinct from the rest, and the tail more robust than the normal individuals.

Bungarus fasciatus, (Schneider.)

Syn.—Scheuchzer, Pl. 655, Fig. 8.
Seba II, Pl. 58, Fig. 2.
Russell I, Pl. 3. Bungarum Pamah.
Pseudoboa fasciata, Schneider.
Boa fasciata, Shaw.

Bungarus annularis, Daudin.
Aspidoclonion, Wagler.
Bungarus annularis, Schlegel.

Ground colour bright gamboge; the anterior half of the head, and the cheeks black with steel blue reflections; from the vertical shield a black longitudinal band, expanding over the neck and sides, and with the former forming a broad arrow mark; lips and throat gamboge, upper lips edged with black; the rest of the body completely surrounded by a number of broad, alternate gamboge and shining black, rings. Iris black; tongue flesh-coloured.

Scuta 200 to 233, Scuta abdominalia 32 to 36.

Habit.—*Pinang, Malayan Peninsula.*

Java, Tenasserim, Bengal, Coromandel.

The neck is covered by 17, the trunk by 15 longitudinal series of smooth scales, which with the exception of the dorsal hexagonal series, are imbricate, rhombic. As noted under *Elaps bivirgatus, Var,* the larynx is not attached to the scabbard of the tongue. Of three young individuals from the valley of Pinang and Province Wellesley, the largest was of the following dimensions:

Length of the head, ...	0 ft.	$1\frac{2}{8}$ inch.
Ditto ditto trunk, ...	3	5
Ditto ditto tail, ...	0	$4\frac{4}{8}$
	3 ft.	$10\frac{6}{8}$ inch.

Circumference of the neck 2, of the trunk $3\frac{2}{8}$, of the root of the tail 2, of the apex $1\frac{3}{8}$ inch.

In the Malayan countries the species of *Bungarus* are not numerous, but *B. candidus,* and *fasciatus* are of no uncommon occurrence in Bengal and on the Coromandel Coast, where, however, it should be observed, a class of the natives ("serpent-charmers,") earn a livelihood by capturing and exhibiting serpents, but this craft is unknown among the Malays. The preceding three species, like the rest of the venomous serpents, are very ferocious when attacked, but unprovokedly they are not known to attack man: on the contrary, when met in the jungle, they attempt to escape. When trod upon, or struck, their rage is instantly excited, in self-defence they will even turn from their retreat, and then their habitual sluggishness is roused to furious activity.

Preparing to attack, the head is, by a short curve of the neck, brought closely to the body, and drawn far backwards, when suddenly darting the anterior part of the body obliquely upwards, they bite. The height of the place where the wound is inflicted, of course depends on the length of the serpent, which is capable of darting nearly the anterior half of the body. Notwithstanding the circular pupil, they appear to shun the light, hiding the head under the folds of the body, and they are singularly uncertain in their movements, often suddenly jerking the head or tail without any apparent object. Like all serpents of tropical Asia, they seldom expose themselves to the sun: when during the day they leave their hiding places, they select the shade. The genus *Bungarus* is terrestrial, feeding on rats, mice, serpents, (*Col. mucosus,* Lin.) and toads. Like other venomous serpents, when the venom has been inflicted on their prey, they disengage it from the fangs, sheathe and place them as horizontally as possible, in order that they may offer no resistance to the introduction into the mouth of the lifeless prey, which is now seized head foremost. The innocuous serpents bite or strangle their prey, which when life is extinct is either swallowed at once, or if it happens to have been killed in a position, likely to render the deglution difficult, is often disengaged from between the teeth, and seized a second time, by the head. In captivity these serpents refuse food, but greedily lap up, and swallow water.

A fowl four minutes after it had been bitten on the innerside of the thigh, by a *Bungarus fasciatus*, fell on the wounded side, and was shortly after seized with slight purging. The eyes were half closed, the pupils alternately dilated and contracted, immobile. In 17 minutes slight spasms occurred, under which the bird expired 43 minutes after it had been wounded.

Another fowl wounded in the same place as the former, by the same serpent, but after an interval of seven hours, expired under similar symptoms, only more violent spasms, in the course of 28 minutes.

Venom taken from another serpent, the fangs of which had been extracted, was inoculated by a lancet-incision in the right thigh; four minutes after the fowl was seized with trembling, fell, and remained lying on the wounded side, with the eyes closed, but it gradually recovered, and rose apparently recovered, 30 minutes after the inoculation of the venom.

Other fowls were killed by different serpents of this species, in 20 to 31 minutes.

Fowls bitten by *Bungarus candidus* expired under similar symptoms, within 30 to 45 minutes; dogs from within 1 hour 10 minutes, to 2 hours, under symptoms noted in Russell's experiments (Russell I, page 53.)

Sub.-Fam. Najinæ, *Bonaparte.*

Hamadryas, *Cantor.*

Head broad, sub-ovate, depressed, with a pair of very large post-occipital shields, and a short, blunt muzzle; cheeks tumid; eyes large, prominent, pupil circular; nostrils wide, between two shields; behind the fangs a few maxillary teeth; neck dilatable; trunk thick, cylindrical; tail short, with Scuta and Scutella.

Hamadryas ophiophagus, Cantor.

Syn.—Hamadryas hannah, Cantor.
Naja elaps, Schlegel, (Young.)
Naja bungarus, Schlegel, (Young.)
Naja vittata, Elliot.
Hamadryas ophiophagus, apud Elliot.

Olive green above; the shields of the head, the scales of the neck, posterior part of the body, and of the tail edged with black; the trunk with a number of distant, oblique, alternate black and white bands, converging towards the head; the throat and anterior part of abdomen impure gamboge, the rest of the scuta and scutella bluish grey, marbled with black, or pale yellowish green, with a narrow sub-marginal brown line. Iris golden, spotted with black; tongue bluish black.

Scuta 215 to 256, Scuta sub-caudalia 13 to 32; Scutella sub-caudalia 63 to 96.

Habit.—*Pinang, Singapore, Malayan Peninsula.*
Java, Sumatra,* Bengal, Assam,† Coromandel.

Of two individuals, from the summit of the Great Hill of Pinang, and from Province Wellesley, the larger was of the following dimensions:

* Sir Stamford Raffles' specimen in the Museum of the Zoological Society, London.
† Specimen in the collection of H. Walker, Esq. Surgeon G. G.

Length of the head,.....	0 ft.	3 inch.
Ditto ditto trunk,.....	8	1
Ditto ditto tail,.....	2	4
	10 ft.	8 inch.

Circumference of the neck $5\frac{2}{8}$, of the trunk $8\frac{5}{8}$, of the tail, $4\frac{1}{8}$ inch.

The neck is covered by 21, the trunk by 17 longitudinal series of smooth imbricate scales: those of the two lowest series are large rhombic; of the sides irregular rhomboidal, appearing linear, all with rounded apex. The Malayan individuals are of a lighter colour, more inclining to yellow, than those observed in Bengal.

Gen. Naja, *Laurenti.*

Head covered with shields; muzzle truncated; the anterior part of the trunk, between the 6th and 12th abdominal scutum, considerably dilatable in the shape of a disk, with a large, white, transparent spot above, edged with black, and somewhat resembling a pair of spectacles.

Naja lutescens,* Laurenti, Var (D, Daudin.)

Syn.—Seba II. T. 97, F. 4.
Naja peruviana, Lacépède.
Russell, I. Pl. 6, Fig. 4, Sankoo Nagoo.
Latreille IV. P. 27.
Vipera naja, Var D, Daudin.
Aspis, Wagler.
Naja tripudians, Var. Gray, Ill. Ind. Zool.
Naja tripudians, Merrem, Var. Schlegel.
"Úlar mata-árı" of the Malays.

Head shining dark brown above; on the sides and lips brownish white; ground colour of the trunk buff, the anterior half of each scale pale greyish brown; beneath buff. Iris black with a narrow light grey margin towards the orbit; tongue light flesh-coloured.

Young.—Much lighter brown than the adult and strongly iridescent.

Scuta 189 to 193; Scutella 49 to 54.

* *Coluber naja*, Linné, *Naja lutescens*, Laurenti, the *cobra de Capello*, has probably the widest range of the Asiatic venomous serpents. The species, or its varieties, inhabits the countries between the Sutlej and Cape Comorin, and Ceylon. According to Mr. Hodgson's observations it does not occur in the valley of Nepal, but it ranges through Hindustan down to Cape Romania, the southern extremity of the Malayan Peninsula, and from thence to Chusan, 30° N. E. 122° E. It is also found in the Philippines, Ternate, Borneo, Java, Sumatra.

Habit.—*Pinang, Singapore, Malayan Peninsula.*
Bengal, Coromandel.

It is numerous in the Malayan hills and valleys, but apparently of uncommon occurrence in Bengal.

Var. nigra.

Syn.—Naja tripudians, Var. nigra, Gray, Illustr. Ind. Zool.
Naja tripudians, Var. Schlegel.

Upper parts intense black with strong purple or blue reflections; temples, lips, and throat pale orange, largely spotted with black; the lateral part of the anterior eight or ten, and of the 14th, 15th, and 17th scuta pale orange, black in the centre and with a broad black margin; the scales and interstitial skin on each side of the anterior eighteen or twenty scuta white or buff, appearing on the lower surface of the hood as two short parallel bands. The rest of the abdominal surface paler black than above, strongly iridescent, in certain lights pale silvery. Iris black with the orbital margin pale grey; tongue light flesh-coloured.

Scuta 184 to 187; Scutella 49 to 52.

Habit.—*Pinang, Singapore.*

At Pinang the preceding variety prevails, at Singapore the present. Both are local, and they appear respectively to congregate on single spots of limited extent. Another black variety (*Naja atra*, Cantor) which inhabits Chusan, differs from the present in having a number of distant transversal double lines of a yellow colour. Beneath it is slate- or pearl-coloured.

The food of *Naja lutescens* consists of rats, small birds, (it occasionally ascends trees,) lizards, and fishes, in search of which latter it frequently takes the water, and even the sea, along the coasts. The largest individual of the two Malayan varieties, was of the following dimensions:

Length of the head, ...	0 ft.	$1\frac{7}{8}$ inch.
Ditto ditto trunk, ...	4	1
Ditto ditto tail, ...	0	9
	4 ft.	$11\frac{7}{8}$ inch.

Circumference of the neck, $2\frac{7}{8}$, of the trunk, $1\frac{5}{8}$, of the root of the tail, $2\frac{3}{8}$ inch.

The following Memorandum relative to the venom of *Naja lutescens* (Laurenti) has kindly been communicated by J. W. Laidlay, Esq., Joint Secretary, Asiatic Society.

"The venom was carefully obtained so as to avoid any admixture of saliva, by compressing the venomous glands. It issued from the lower aperture of the fangs in viscid drops of a syrupy consistency, and was received as it fell from the fangs in platina capsules. The serpents operated upon were an adult *Cobra de Capello (Naja lutescens*, Laurenti) and one of its *Varieties (Naja kaouthia*, apud Belanger) and were supplied by the kindness of J. W. Grant, Esq. C. S."

"In every instance the venom readily changed the blue of litmus to red, and restored the bright yellow to turmeric paper that had been reddened by the application of caustic alkali; an unequivocal proof of acidity. When left to spontaneous evaporation, it dried into a varnish resembling mucilage, or the glare of an egg, cracking in all directions; and on being heated it deposited an abundant coagulum, apparently albuminous. In either instance when redissolved, it retained its acid property."

"What the nature of this acid may be, it was impossible to determine from the small quantity operated upon; nor am I prepared to say that the poison *itself* is an acid, although if it be not so, it is certainly associated with one. Most probably from the rapid and spontaneous disappearance of its properties by keeping, the poison itself consists of some exceedingly unstable compound, which would be wholly disorganised under any attempt at isolation by chemical means."

Sub.-Fam. Viperinæ, *Bonaparte.*

Gen. Trigonocephalus, *Oppel.*

Head broad triangular, scaly, with a pit before the eyes; trunk robust, cylindrical, tail short, tapering to a point, with scutella beneath.

Trigonocephalus gramineus, (Shaw.)

Syn.—Russell, I. Pl. 9, Bodroo Pam; II. Pl. 20.
Coluber gramineus, Shaw.
Vipera viridis, Daudin.
Trimeresurus viridis, Lacépède.
Cophias viridis, Merrem.
Coluber gramineus, apud Raffles: Tr. Linn Soc. XIII.
Bodroo Pam, Russel, apud Davy: Ceylon, &c.
Bothrops, Wagler.
Trigonocephalus viridis, Schlegel.
Trigonocephalus erythrurus, Cantor, (young.)
"Ular daun" of the Malays.

Grass green above, lighter on the sides, frequently interrupted by zig-zag lines, produced by the black interstitial skin ; the tail in some bright cinnamon-red ; from the sides of the neck along the lowest series of scales a pale yellow line. Lips, throat and abdominal surface greenish yellow ; scutella in some spotted with cinnamon-colour. Iris golden, dotted with brown, but leaving a narrow margin bordering the elliptical black pupil, which is vertically contracted by the light. Tongue pale bluish with black apex.

Scuta 165 to 170; Scutella 58 to 71.

HABIT.—*Pinang, Singapore, Malayan Peninsula.*
New-Holland,* Timor, Pulo Samao, Celebes, Eastern Java, Banka, Sumatra, Tenasserim, Bengal, Chirra Púnji, Nipal† Coromandel, Ceylon.

VAR.

SYN.—Coluber gramineus, Var. apud Raffles, l. c.

Differs from the preceding by its Indian or brick-red line on each side.

HABIT.—*Pinang, Singapore, Malayan Peninsula.*
Sumatra, Tenasserim.

In the Malayan hills and valleys the variety is by far the more numerous: it is indeed the most common of the venomous serpents. In Bengal I never observed but a single young one, (*T. erythrurus,*) captured in the Sunderbuns. It is generally observed on trees, hanging down from the branches, or concealed under the dense foliage ; it preys on small birds and tree-frogs [*Polypedates leucomystax,* (Gravenhorst.)] But occasionally it descends to the ground, in search of frogs and toads. The neck is covered by 27, the trunk by 23 or 25 ovate imbricate, keeled scales. The tail is prehensile.

Of a number examined none exceeded the following dimensions:

Length of the head, ...	0 ft.	$1\frac{4}{8}$ inch.
Ditto ditto trunk, ...	2	0
Ditto ditto tail, ...	0	$5\frac{6}{8}$
	2 ft.	$7\frac{2}{8}$ inch.

* Lacépède, on the authority of M. Baudin.

† Specimen in Mr. Hodgson's collection.

Circumference of the neck, $1\frac{4}{8}$, of the trunk, $2\frac{2}{8}$, of the root of the tail, 1 inch.

TRIGONOCEPHALUS SUMATRANUS, (Raffles*) VAR. (See pl. XL, Fig. 9.)

SYN.—"Úlar kápak" of the Malays of the Peninsula.

Young.—Grass green above, lighter on the sides and lips; from the pit beneath the eye, over the cheek a cinnamon red line with the upper margin buff; on each side of the back a series of distant spots, half cinnamon, half buff coloured, each of the two or three scales composing the spots, being of these two colours; on the tail the spots are confluent, forming transversal lines. Beneath light yellowish green. The largest individual in this garb measured 1 ft. $3\frac{6}{8}$ inch in length.

Adult.—Ground colour above light yellow, or pale greenish yellow, largely mixed with intense dull black, so as to make the general appearance black, through which the ground-colour appears on the head as irregular spots, and a continued line, beneath which a black line proceeds from the eye to the occiput: on the trunk and tail as narrow, distant, transversal bands, continued or broken up into spots. Labials, gulars, the lowest two or three lateral series of scales, and scuta gamboge with black margins; scutella largely spotted with black. Iris golden dotted with black and with a black transversal bar, pupil elliptical, vertically contracted by the light; tongue bluish grey.

Scuta 141 to 147; Scutella 42 to 52.

HABIT.—*Pinang, Singapore, Malayan Peninsula.*

Unfortunately in the Malayan countries this variety is not of so rare occurrence as the species appears to be in Sumatra. Both are equally dreaded. The natives of Sumatra denominate it "Púchuk," a young, green shoot of a tree, a name expressive both of its colour and arborial habits. The Malays of the Peninsula, who only know the black variety, call it from its broad cordate head the "hatchet-shaped" serpent, "Kápak," or "Kápah" signifying an axe. At Pinang it generally occupies the lower parts of the hills or the valleys, either on the ground or on trees, but Dr. Montgomerie in one instance observed it at an elevation of 2,200 feet. It preys upon rats, small birds, tree-frogs and

* SYN.—Seba, II. T. 68, F. 4.—*Coluber sumatranus*, Raffles, Ular Poochook.—*Cophias wagleri*, H. Boie.—*Tropidolæmus*, Wagler.—*Trigonocephalus wagleri*, Schlegel.

HABIT.—Sumatra.

toads. The neck is covered by 27, the trunk by 23 to 25 longitudinal series of ovate, imbricate keeled scales. The labials, and the gular scales are sharply keeled, but the keels of the former become obliterated with age. The tail is prehensile. Of nine examined the largest individual was of the following dimensions:

Length of the head,	0 ft.	2 inch.
Ditto ditto trunk,	1	$6\frac{4}{8}$
Ditto ditto tail,	0	$6\frac{1}{8}$
	2 ft.	$2\frac{5}{8}$ inch.

Circumference of the neck, $2\frac{6}{8}$, of the trunk, $4\frac{4}{8}$, of the root of the tail, $1\frac{6}{8}$ inch.

Trigonocephalus puniceus, Reinwardt.

Syn.—Seba, II, Tab. 64. Fig. 1.
Klein: Tentam. Pg. 10. No 25.*
Vipera acontia, Laurenti.
Coluber acontia, Gmelin.
Vipera acontias, Daudin.
Echidna acontia, Merrem.
Trigonocephalus puniceus, Reinwardt.
Atropos, Wagler.
Trigonocephalus purpureomaculatus, Gray. Ill. Ind. Zool.
Trigonocephalus puniceus, Schlegel.

Dull reddish-brown or olive tinged with purple; in some an indistinct black line from the eye to the sides of the neck; the scales dotted or finely marbled with black, their keels pale ochre; the posterior part of the trunk and tail with irregular dark brown spots; the interstitial skin reddish brown, lighter or darker than the scales; lips, throat, the three or four lowest series of scales, and beneath pale greenish yellow; scuta and scutella with brown margins, the latter largely spotted with brown. Iris greenish golden marbled with black; pupil elliptical vertically contracted by the light; tongue light brownish grey.

Scuta 162 to 171; Scutella 65 to 70.

Habit.—*Pinang, Malayan Peninsula.*
Singapore, Java.

The malayan individuals differ slightly from the javanese in having very few dark spots and no reddish line above the black one on the

* As several serpents have by Klein been indicated under the name of *acontias*, the specific name of Reinwardt has been substituted.

sides of the head. The oval gular scales have a tubercular appearance. The integuments of the head and body are remarkably lax, like those of *Acrochordus javanicus*. The neck is covered by 31, the trunk by 27 longitudinal series of ovate or conical scales; they are not imbricate, but are frequently surrounded by the naked skin. The tail is prehensile, but less so than in the preceding species. The malayan individuals appear to be less numerous than the javanese. The four observed were all found on the ground in valleys. The largest, which had been feeding on a rat, was of the following dimensions:

Length of the head, ...	0 ft.	$1\frac{4}{8}$ inch.
Ditto ditto trunk, ...	2	$5\frac{3}{8}$
Ditto ditto tail, ...	0	$5\frac{4}{8}$
	3 ft.	$0\frac{3}{8}$ inch.

Circumference of the neck, 2, of the trunk, $3\frac{1}{8}$, of the root of the tail, $1\frac{3}{8}$ inch.

In general sluggish, but when roused, ferocious habits, the preceding three species resemble the genus *Bungarus;* their mode of attack is also similar: like *Vipera russelli*, (Shaw)* when it prepares to dart, they vibrate the prehensile tail, and utter a faint hissing sound. As the pupil is vertically contracted by the light, they frequently miss their aim, and like *Bungarus*, *Naja*, *Vipera russelli* and *Hydrus*, in the extreme of fury, they will fix the fangs in their own bodies. Although they are averse to motion, they are not of quite so stationary habits as represented by M. Schlegel, (*Essay : Partie Descriptive*, page 520.) In the jungle I have noticed them moving between the branches of trees or on the ground, either in search of prey, or after heavy rains have flooded their hiding places. In Bengal most terrestrial serpents keep the latter during the hot season, but the rains send them abroad in search of dry localities. Although the present genus has venomous organs, as highly developed as *Crotalus* or *Vipera*, the effects produced by wounds of two species at least, appear to be less dangerous, than might *à priori* be supposed. According to Russell's experiments with the venom of *Trigonocephalus gramineus*, chickens expired within 8 to 33 minutes, pigeons in 11 to 18 minutes. A pig recovered in 6 or

* Syn.—Russell, I. Pl. 7. *Katuka Rekula Poda*, II. Pl. 32.—*Coluber russellii*, Shaw.—*Vipera elegans*, Daudin.

7 hours, a dog in 2 to 3 hours, after having been wounded, (Russell, I. page 60.) Mr. Hodgson has seen a man who was wounded by this species, the only venomous known to inhabit Nepal, fearfully suffering from pain and swelling, but he never heard of a fatal case.—(*Transactions Zoological Society. London.* Vol. II, page 309.)

A male *Trigonocephalus puniceus*, successively wounded two fowls, one in the chest, the other in the left thigh. In both cases the fangs of both sides acted, but neither of the birds experienced any other effect except a slight pain, which lasted a few minutes after they had been wounded. It should, however, be observed, that the serpent at the time had gorged itself with food, in which state it was observed close to the General Hospital, in the valley of Pinang. Another individual was subsequently caused to wound a fowl on the inside of the thigh. The bird immediately drew up the wounded leg, fell down and was purged 3 minutes after being wounded. In 3 minutes more, slight spasms of the head and neck appeared at short intervals, but they ceased in 5 minutes, when the fowl made, at first some unsuccessful, attempts to rise. Twenty-one minutes after having been wounded, the bird rose, shook the wings, and had perfectly recovered. The same serpent subsequently was made to wound another fowl on the inside of the left thigh. The bird drew up the wounded leg, and was slightly purged, but showed no other inconvenience from the wound.

The following experiment is communicated by Dr. Montgomerie. An adult *Trigonocephalus sumatranus, Var.* was made to bite a fowl in the fleshy part of the thigh. The bird limped about for a short time, and a minute after it was wounded commenced purging. At the end of two minutes it fell, breathing laboriously and was strongly convulsed. At the end of six minutes a few drops of water exuded from the eyes; in fifteen seconds more it was quite dead: six minutes and a quarter after it had been wounded. Both fangs had acted, the wound was livid, and similar lines were observed in the course of the absorbents. On another occasion, after some unsuccessful attempts to make another individual bite a fowl, a terrier accidentally was wounded in the fleshy part of the fore-arm. The serpent fixed the fangs for an instant in the flesh; the dog pitifully screaming, jumped and shook it off. A ligature was immediately applied above the elbow, and the dog secured in a cage. It continued for some time whining from pain,

probably aggravated by the tight ligature, which was removed at the close of half an hour, and the dog let free. In a short time it had regained the free use of the limb and was apparently well. But on the third day following a perfectly circular slough, including the bitten spot of about $\frac{3}{4}$ of an inch in diameter, was thrown off, the sore readily healed up and the dog suffered no further inconvenience.

PELAGIC.

FAM. HYDRIDÆ, Bonaparte.

Gen. Laticauda, *Laurenti.*

Tail compressed, with two surfaces, gradually increasing in height, and with three furrows (sutures) on each side.

Laticauda scutata, Laurenti.

Syn.—Coluber laticaudatus, Linné. Mus. A. Fig. 1754.
Laticauda imbricata, Laurenti? 1768.
Le serpent large-queue, Daubenton, 1784.
Coluber laticaudatus, apud Thunberg, 1787.
Coluber laticaudatus, apud Gmelin, and E. W. Gray, 1789.
La queue plate, Lacépède, 1801.
Hydrus colubrinus, Schneider, 1801.
Platurus fasciatus, Latreille, 1802.
Hydrus colubrinus, apud Shaw, 1802.
Platurus fasciatus, Daudin, 1803.
Aipysurus lævis, Lacépède, 1804, (Var?)
Platurus semifasciatus, Reinwardt, M. S.
Platurus fasciatus, apud Wagler, 1830.
Hydrophis colubrina, Temminck and Schlegel, Fauna Japonica, Tab. 10.
Hydrophis colubrina, Schlegel, 1837.

New born.—Ground colour gamboge, greenish above, with numerous distant broad rings of a blue reflecting black colour, encircling the body; the first and second black mark of the head and neck are beneath joined by a short longitudinal line, commencing on the lower labial shields; another shorter black line borders above the gamboge upper labials; the scales between the rings, the scuta and scutella with blackish margins.

Older.—Of paler colours, lead-grey on the back; the rings impure light blue on the sides and abdomen. The scales and scuta without blackish margins. Iris black, pupil circular; tongue grey.

Scuta 227 to 246; Scutella 32 to 41.

Habit.—*Sea of the Malayan Peninsula and Islands.*

Bay of Bengal (Ramree, Pondicherry, Nicobars), Sea of Timor, Moluccа and Liewkiew Islands, Celebes, New Guinea, Tongataboo, China Sea.

This species is readily identified by the abdominal scuta, and the scutellated very broad tail. The anterior frontals are separated by a small elongated pentagonal, or rhombic, shield, bordered behind by the vertical, which is proportionally the largest shield, either equalling or exceeding each of the occipitals. The eyes are comparatively large and prominent, surrounded by two post-orbitals, one præ-orbital, and beneath, by the third and fourth of the seven large upper labials. The lower jaw is covered in front by the rostral and the two first labials, the succeeding seven are elongated linear and placed horizontally so as to be hid by the upper labials, when the mouth is closed. The chin is covered by two pairs of pentagonal shields, between which and the labials appear two or three series of elongated scales. The neck is covered by 25, the anterior part of the trunk by 23, increasing to 25 and again decreasing to 19 longitudinal series of large, smooth scales. The nostrils are small, opening laterally. The tail, though much compressed, presents a broad flat surface beneath, till near the apex, where it becomes two-edged. The largest individual examined was of the following dimensions :

Length of the head,.....	0 ft.	1 inch.
Ditto ditto trunk,.....	3	2
Ditto ditto tail,.....	0	$5\frac{3}{8}$
	3 ft.	$8\frac{3}{8}$ inch.

Circumference of the neck, $1\frac{7}{8}$, greatest do of the trunk, 4 inch.

Gen. Hydrus, *Schneider.*

Body slender in front, gradually thickening, covered with scales ; tail compressed, two-edged.

Hydrus striatus, (Lacépède.)

Syn.*—Leioselasma striata, Lacépède, 1804.
Hydrophis striata, Temminck and Schlegel: Fauna Japon. Pl. 7.
Hydrophis striata, Schlegel: Essay, 1837.
Hydrophis striata, Schlegel, apud Cantor, Tr. Zool. Soc. London, Vol. II.

* Doubtful Synonymy.—*Russell*, II. *Pl.* 9, *Chittul*, 1801, agrees with this species in the following characters: the eyes high, small, orbicular ; the trunk round till near the anus, where it becomes compressed ; the scales smooth, imbricate, orbicular on the sides ; the central abdominal series much larger than in any of the other species, (Russell.) The difference of colours is unimportant, as it is liable to variations, not only individually but according to age. Besides, all the species acquire a light bluish appearance about

Adult ?—Crown shields light chestnut; lips and throat pale yellow; ground colour above pale greenish yellow, sides and abdomen buff with numerous distant black transversal bands, becoming indistinct towards the tail and on the sides, where the scales are partially edged or spotted with black. The interstitial skin of the back and sides black, of the abdomen buff. Iris dark grey with a buff orbital margin; pupil black minute; tongue buff.

Central abdominal series of larger scales, 347 + 41.

Habit.—*Sea of Pinang and Malayan Peninsula.*

Sea of Liewkiew Islands, Timor, Sumatra, Bay of Bengal.

The eyes are lateral, sunk, excessively small, of a diameter equalling the large almost vertically opening nostrils. The single præ-orbital shield is beneath wedged in between the second and third upper labial. The latter, as well as the fourth and fifth, border the orbit beneath. Of the two post-orbitals the lower is wedged in between the fifth upper labial and the large shield resting upon the sixth upper labial. Above the latter and the seventh, the cheeks are covered by three very large shields. The seven upper labials are large and very high. Of the nine inferior labials the two anterior are the largest, and placed vertically, the succeeding seven are smaller and placed nearly horizontally, so as to become partially hid when the jaws are closed. The chin is covered by the first pair of labials and two pairs of elongated mentals, between which and the inferior labials intervene on each side the second labial, three very large shields, and three smaller. The neck is covered by 37, the anterior part of the trunk by 33, and the thickest by 40 longitudinal series of rhombic scales. In the individuals examined by M. Schlegel, all of less length than my own, the series varied from 31, 29 to 27. The scales are rhombic with rounded apex, each scale with a small central tubercle, or an elevated (keeled) line, which however with age becomes indistinct or obliterated. The central larger

the period when the integuments are to be changed. Russell's description was copied by Daudin, who merely supplied the denomination of *Hydrophis cyanocinctus*, (*Hydrus brugmansii*, Boie, 1827,) upon which Wagler founded his genus *Enhydris*, 1830. According to M. Schlegel, all these are Synonymes of *Hydrus nigrocinctus* (Daudin). The only means of deciding the Synonymy of this and most of the other species appears to be a close examination of such original specimens, described by Russell and Shaw, which may at present exist in the collection of the British Museum.

abdominal scales are hexagonal, with or without a small tubercle on each side. The anus is covered by three or four excessively large scales. The larger individual of two was of the following dimensions:

Length of the head, ...	0 ft.	$1\frac{5}{8}$ inch.
Ditto ditto trunk, ...	5	$6\frac{3}{8}$
Ditto ditto tail, ...	0	$4\frac{6}{8}$
	6 ft.	$0\frac{6}{8}$ inch.

Circumference of the neck, $3\frac{3}{8}$, greatest do. of the trunk, $4\frac{2}{8}$ inch.

Hydrus nigrocinctus, (Daudin.)

Syn.*—Russell, II. Pl. 6. Kerril Pattee, 1801.
Hydrophis nigrocinctus, Daudin, 1803.
Hydrophis melanurus, Wagler, 1828.
Polyodontes annulatus, Lesson, 1833.
Hydrophis nigrocincta, Schlegel, 1837.
Hydrophis nigrocincta, Schlegel, apud Cantor, l. c.

New born.—Ground colour buff or bluish-white; upper-lips and muzzle black, and a transversal band across the hind head, from whence proceeds a triangular or cross mark towards the vertex; gular and inferior labial shields edged and spotted with black; trunk and tail with numerous black transversal bands, either encircling the body, or interrupted on the abdominal ridge, where appear a few indistinct black spots; apex of the tail black. Entire length $8\frac{4}{8}$ inch.

Older.—Greyish green olive above, yellowish on the sides, buff beneath; the bands less intense black, often placed obliquely so as to join each other on the back. Iris grey; pupil circular, black; tongue buff. Central abdominal series of larger scales, 281+ 41; 284+ 43; 289+ 39.

Habit.—*Sea of Malayan Peninsula, Pinang, Singapore.*
Estuaries of the Ganges, Bay of Bengal.

This species greatly resembles *H. striatus*, from which it differs in the more compressed general form; the eye though small, is of a larger diameter than the nostril, and it is surrounded by a single post-orbital shield, which beneath is wedged in between the fourth and fifth upper labial, and the præ-orbital between the second and third. The orbit is bordered beneath almost entirely by the fourth upper labial. The

* Doubtful Syn.—*Russell*, II. *Pl.* 13, *Kaddell Nagam*, 1801. (*Enhydris gracilis*, Merrem, 1820.) *Hydrus spiralis*, Shaw, 1802.

sixth upper labial is the largest, in some individuals covering the cheek and bordering above the occipital. Of the seven or eight inferior labials the four anterior are very large; above the third there is one or two small triangular shields; the other three or four posterior labials are very small elongated. There is no horizontal series of labials as in *H. striatus*, and the two elongated pairs of mentals immediately border the labials. The neck is covered by 33, the thickest part of the trunk by 53 longitudinal series of scales. Those examined by M. Schlegel, the length of which exceeds those come under my own observation, had 27, 29 to 31 series of scales. Those of the anterior part of the back are rhomboidal, those of the posterior part rhombic with rounded apex and slightly imbricate; those of the sides hexagonal: all have either a sharply raised keel or a central tubercle, both of which frequently become obliterated. The central series of abdominal scales are a little larger than the rest, frequently divided in two hexagonal, and with a small tubercle on each side, which often becomes indistinct, or obliterated. The anus is covered by 3 or 4 very large, or by a series of small scales. The largest of six individuals was of the following dimensions:

Length of the head, ...	0 ft.	$0\frac{6}{8}$ inch.
Ditto ditto trunk, ...	2	$0\frac{2}{8}$
Ditto ditto tail, ...	0	$2\frac{6}{8}$
	2 ft.	$3\frac{6}{8}$ inch.

Circumference of the neck, $\frac{6}{8}$; greatest do. of the trunk, 2 inch.

VAR. ? (See Pl. XL. Fig. 8.)

Crown shields olive green with a blackish band from the eyes over the anterior part of the upper lip; the posterior part and the lower lip pale yellow; ground colour of the trunk greenish lead grey above, pale yellow on the sides, beneath buff, with numerous black transveral bands. Iris amber-coloured with the orbital margin dark grey. Central abdominal series of scales 235+38.

It differs from the preceding in the following particulars. The head is proportionally shorter, broader triangular, the muzzle more pointed, and the upper surface from the vertical shield very declivous. The eyes are much larger than the nostrils, with a single præ-and post-orbital, but bordered beneath by the third and fourth upper labial.

The latter, six in number, present nothing abnormal. The lower labials are also six, proportionally larger than in the preceding. The mouth is smaller. The make of the trunk is more robust; the neck is covered by 15, the thickest part of the body by 21 longitudinal series of proportionally much broader hexagonal scales, tuberculated on the anterior part of the trunk, on the rest keeled, forming series of sharp, continued ridges. The central abdominal series is at first somewhat larger than the rest, angular, with a small more or less distinct tubercle on each side. A single individual, captured in a fishing stake off Pinang, was of the following dimensions :—

Length of the head, ...	0 ft.	$0\frac{6}{8}$ inch.
Ditto ditto trunk, ...	1	$6\frac{2}{8}$
Ditto ditto tail, ...	0	$2\frac{4}{8}$
	1 ft.	$9\frac{4}{8}$ inch.

Circumference of the neck, $1\frac{3}{8}$, greatest do. of the trunk, $2\frac{1}{8}$ inch.

Hydrus gracilis, Shaw.

Syn.*—Russell, I, Pl. 44, Tatta Pam, 1796, (very young.)
Hydrus fasciatus, apud Shaw (Russell, I, 44, excluding the other *Syn.*) 1802.
Angvis mamillaris, Daudin, 1803.
Hydrus, apud Wagler, 1830.
Russell, II, Pl. 7, Shootur Sun, 1801.
Hydrus cloris, Daudin, 1803.
Hydrophis, apud Wagler, 1830.
Russell, II, Pl. 8, Kalla Shootur Sun, 1801.
Hydrophis obscurus, Daudin, 1803.
Hydrophis, apud Wagler, 1830.
Hydrus fasciatus, apud Guérin : Iconog. Rept. Pl. 25, 1, 1829.
Pelamis chloris, Merrem apud Horsfield : Life of Raffles, 1830.
Microcephalus gracilis, Lesson, 1833.
Hydrophis gracilis, Schlegel (*Syn.* Angvis xiphura, Hermann, Typhlops, Merr. Tent. p. 158,) 1837.
Hydrophis gracilis, Schlegel, apud Cantor, l. c. Pl. 56, (Young.)

New born.—Head shining intense black ; ground colour of the trunk and tail bright gamboge, on the back and sides interrupted by numerous black rings, which above are widened into lozenge shape, narrowed on the sides. Throat and anterior half of abdomen intense black, continued as a more or less distinct line to the black apex of the tail. On the sides the yellow ground colour appears in the shape of oval spots,

* Doubtful Syn.—*Angvis laticauda, Linné, Mus. A. F.* 1754. *Vosmaer, Monogr. Fig.* 2, 1774, *Hydrus fasciatus, Schneider,* 1801.

gradually increasing in depth towards the tail. Entire length, 1 ft. 3 inch.

Adult ?—Head and back uniformly dark olive or brown, becoming greyish on the posterior half, and very indistinct or obliterated on the sides. In some a pale yellow spot on each side of the hindhead, and a third on the frontal shields. The lateral oval spots pale sulphur coloured on the anterior half, pale greenish yellow on the posterior. The black of the lower surface very pale, but distinct. Iris black; tongue buff.

Central abdominal series of larger scales, 454+60.

Habit.—*Sea of Malayan Peninsula and Islands.*
Bay of Bengal, Malabar, Sumatra, Borneo.

In form and number the shields of the head resemble those of *Hydrus nigrocinctus*, so as to afford no distinguishing character. Yet it may be readily distinguished from that and other species by the excessive slenderness of the anterior, cylindrical part of the trunk, which from thence becomes much compressed, gradually increasing in bulk and vertical diameter till towards the tail, where the diameter again decreases. The scales of the cylindrical, anterior part of the trunk are rhomboidal with rounded points and slightly imbricate; the rest are hexagonal. The central abdominal series continued beneath the tail, consists of hexagonal scales, a little larger than the rest, and frequently longitudinally divided. In the very young all the scales are smooth, with age the central abdominal ones acquire a small tubercle on each side, and those of the compressed sides and of the back each a central tubercle. In the largest individuals the central abdominal scales have three longitudinally placed minute tubercles on each side, and the rest of the hexagonal scales three or four similar central tubercles. In the new-born the neck is covered by 32, the bulkiest part of the body by 49 longitudinal series; these parts are covered by 26 and 44 series in the largest individual, which is of the following dimensions:

Length of the head, ...	0 ft.	$0\frac{5}{8}$ inch.
Ditto ditto trunk, ...	3	$2\frac{5}{8}$
Ditto ditto tail, ...	0	4
	3 ft.	$7\frac{3}{8}$ inch.

Circumference of the neck, $1\frac{2}{8}$, of greatest do. of the trunk, $3\frac{6}{8}$ inch.

Hydrus schistosus, (Daudin.)

Syn.*—Russell, II, Pl. 10, Hoogli Pattee, 1801.
Russell, II, Pl. 11, Valakadyen, 1801.
Hydrophis schistosus, Daudin, 1803.
Hydrus valakadyen, H. Boie, 1827.
Disteira russelli, Fitzinger, 1827.
Hydrophis, apud Wagler, 1830.
Lcioselasma schistosa, Fitzinger, 1827.
Hydrus, apud Wagler, 1830.
Hydrophis schistosa, Schlegel, 1837.
Hydrophis schistosa, Schlegel, apud Cantor, l. c.

New born.—Head above blackish or dark brown; back and sides with numerous transversal blackish bands, broad above, narrow on the sides; lips, throat, sides and abdomen buff; tail blackish with a few transversal buff bands above. Entire length $10\frac{3}{4}$ inch.

Adult ?—Head above and back either uniformly pale greenish grey, or with darker transversal bands, becoming more or less indistinct on the sides; lips, throat, sides brownish white or buff; tail uniformly blackish, or greyish olive-green. Iris pale amber or greenish-yellow, with a grey orbital margin; pupil black, tongue buff.

Central abdominal series: 239+47; 242+42; 312+58.

Habit.—*Sea of Malayan Peninsula and Islands.*
Bay of Bengal, Malabar, Sumatra.

The head is elongated conical, the muzzle sloping and the rostral shield beneath terminating in a vertically projecting point, which fits into a corresponding cavity in the lower jaw. The anterior elongated triangular frontal shields are next to the occipitals the largest; the large oval nostrils send a slit towards the external margin of the shield. The eyes are lateral, moderate, surrounded by a præ-orbital, a post-orbital, frequently cut in two smaller, and beneath by the fourth upper labial shield. Behind the latter, the lip is covered by three or four horizontally placed small shields, above which appear three large vertically placed shields, of which the last borders the sides of the occipital pair. The lower rostral is remarkably elongated, linear, and hid in a furrow between the first pair of inferior labials. Of the latter the anterior five on each side are much elongated, followed by five or six smaller. The chin is covered with numerous minute scales, and like

* Doubtful Syn.—*Hydrus major, Shaw*, 1802.—*Disteira doliata, Lacépède*, 1804.

the rest of the body with very lax skin. In the young ones the neck is covered by 17, the bulkiest part of the body by 57 longitudinal series of smooth, somewhat tubercular scales. Older individuals have these parts covered by 48 and 60 series of hexagonal scales, either with a short keel dividing the anterior half, or a central tubercle. The central, slightly raised, abdominal series commences very far back, from one to three inches behind the chin. The anterior scales are wedge-shaped hexagonal, the posterior are broader, but slightly larger, than the rest, with a small elongated tubercle on each side. The largest individual of a great number, was of the following dimensions :

Length of the head, ...	0 ft.	1 inch.
Ditto ditto trunk, ...	3	$1\frac{4}{8}$
Ditto ditto tail, ...	0	$4\frac{4}{8}$
	3 ft.	7 inch.

Circumference of the neck, $2\frac{3}{8}$, greatest do. of the trunk, 5 inch.

Hydrus pelamidoides, (Schlegel.)

Syn.*—Pelamis carinata, Cuvier, MS.
Hydrophis (Disteira doliata, Lacép.) Wagler, 1830.
Lapemis hardwickii, Gray, Ill. Ind. Zool. 1832.
Hydrophis pelamidoides, Schlegel, 1837.
Hydrophis pelamidoides, Temminck and Schlegel, Fauna Japon. Tab. 9.
Hydrophis pelamidoides, Schlegel, apud Cantor, l. c.

Young.—Sulphur coloured, paler on the sides and abdomen ; the head largely spotted with blackish, through which the ground colour appears in the form of a rectangle, the two sides of which pass from the hind-head to the orbit, the anterior across the frontals, the posterior over the hind-head ; two yellow spots between the nostrils ; lips yellow, cheeks and throat blackish ; on the back a number of transversal blackish bands to the middle of the sides, broader than the intervening yellow lines ; tail black. Entire length $10\frac{1}{8}$ inch.

Adult ?—Head uniformly reddish brown above ; ground colour greenish yellow, lighter on the sides and beneath, with broad lozenge shaped transversal bands of a blackish olive, continued on the anterior half of the tail ; posterior half blackish. Iris dark olive ; pupil black ; tongue buff.

* Doubtful Syn.—*Russell*, II, *Pl.* 12, *Shiddil*, 1801.—*Hydrus curtus*, *Shaw*, 1802.

Habit.—*Sea of Malayan Peninsula and Islands.*

Bay of Bengal, Sea of Celebes, Molucca Islands, China Sea.

The head is much depressed, not broader than the neck; the muzzle broad, rounded; the rostral shield is large, rectangular pentagonal, broader than high, the lower margin with a central point and a notch on each side. The eyes are moderate, lateral, not prominent, surrounded by a præ-orbital, a post-orbital, and beneath by the third and fourth upper labials. The frenal shield, observed by M. Schlegel, was not present in four individuals, examined in the straits of Malacca: its existence therefore appears not to be constant: in all *Hydri* the shields of the head are liable to considerable individual variations of form. Of the eight upper labials the posterior three are very small, which is also the case with the posterior five of the nine inferior labials. The two pairs of elongated mentals are outside bordered by the three first inferior labials, inside, by several small scales. In the young the neck is covered by 37, the thickest part of the trunk by 40 longitudinal series of hexagonal, smooth, comparatively small scales. In the older individual these parts are covered by 32, and 37 large hexagonal scales, each with a central tubercle. The lower series of the sides are slightly larger than the rest, and vertically elongated, so as to acquire a rectangular appearance. The central abdominal series is much smaller than the rest. Each scale is either rhombic, and, as represented in the excellent plates of *Fauna Japonica*, hemmed in between four* of the two lowest lateral series, or they are absent, and their place is occupied by a pair of the former, which are soldered together. In young individuals the central series frequently consists of alternate broad triangular, and very minute rectangular scales, both kinds smaller than the rest. The largest individual of four was of the following dimensions:

Length of the head,	0 ft.	1 inch.
Ditto ditto trunk,	1	8
Ditto ditto tail,	0	$2\frac{1}{8}$
	1 ft.	$11\frac{1}{8}$ inch.

Circumference of the neck, $2\frac{1}{8}$, greatest do. of the trunk, 4 inch.

* A somewhat similar disposition is observed in the central dorsal series of the however differently shaped scales of *Xenodermus javanicus*, Reinhardt.

Hydrus bicolor, Schneider.

Syn.—Seba, II, Tab. 77, Fig. 1.
Angvis platura,* Linné, 1766.
Vosmaer: Monogr. Fig. 1. 1774.
Angvis platuros, apud Gmelin, 1788.
Russell, I, Pl. 41. Nalla Wahlagillee Pam. 1799.
Lacépède V, Tab. 15, Fig. 2, 1801.
Hydrus bicolor, Schneider, 1801.
Hydrophis platurus, Latreille, 1802.
Hydrus bicolor, apud Shaw, 1802.
Pelamis bicolor, Daudin 1803.
Pelamys (Angvis platura, Lin.) Wagler, 1830.
Pelamis bicolor, apud Horsfield, Life of Raffles, 1830.
Pelamis bicolor, apud Oken, 1836.
Hydrophis pelamis, Schlegel, 1837.
Hydrophis pelamis, Temminck and Schlegel, Fauna Japonica, page 60.

Head and back black (inky), forming a straight line on the sides till towards the posterior part, where it becomes largely undulating, so as to appear as broad bands; lips, throat and sides sulphur coloured, turning into yellowish white or buff on the abdomen† and tail; posterior parts of the sides with some more or less distinct rounded black spots; tail largely banded or spotted with black. Iris pale yellow with a broad black orbital margin; pupil black; tongue buff.

Habit.—*Sea of Malayan Peninsula.*
Bay of Bengal, Malabar, Sea of Sumatra, Java, Celebes, Molucca Islands, China Sea (to 27° N. Lat.) Otaheite, Bay of Port Jackson (33° 55′ S. Lat.—151° 25′ E. Long.)

The head is very elongated, depressed, viewed from above, it presents a striking resemblance to *Herpetodryas oxycephalus* (Reinwardt). The eye is larger than in any other species of *Hydrus*, surrounded by two, three, or even four post-orbitals, one large præ-orbital, and beneath, by the fourth upper labial shield. A frenal shield has been observed in some individuals, but it was absent in that examined in the straits of Malacca, nor does it exist in the specimens, in the Museum of the Asiatic Society. The neck is covered by 44, the thickest part of the trunk by 52 longitudinal series of small scales. Those of the upper parts are smooth, hexagonal; those of the sides approach the orbicular form, and have in the centre one, two or three longitudinally placed

* In consequence of the specific name of Linné having been applied by Latreille to a genus (*Platurus*), that of Schneider, the next different in succession, has been substituted.

† In the individual figured by Russell, the bright yellow colour formed a narrow lateral line, below which the sides and abdomen were of a dusky greenish yellow.

minute tubercles. Similar tubercles are observed on each side of the scales, forming the central abdominal series, which is composed either of entire hexagonal scales, a little larger than the rest, or they are longitudinally divided into pairs of smaller pentagonal scales, which have the appearance of being divided by an abdominal suture. A single individual taken in a fishing stake, off the coast of Province Wellesley was of the following dimensions :

Length of the head, ...	0 ft.	$1\frac{5}{8}$ inch.
Ditto ditto trunk, ...	2	$1\frac{7}{8}$
Ditto ditto tail, ...	0	$3\frac{6}{8}$
	2 ft.	$7\frac{2}{8}$ inch.

Circumference of the neck, $2\frac{1}{8}$, greatest do. of the trunk, $3\frac{2}{8}$ inch.

The preceding, comprising all the hitherto known species of pelagic serpents were observed chiefly at Pinang, among the abundant supply of fishes, daily carried to the markets. Of their general habits some account appears in the *Transactions of the Zoological Society, London, Vol. II, p.* 303. One of them, *Hydrus schistosus,* is incredibly numerous in the Bay of Bengal, at Pinang and Singapore, far more so than any known terrestrial serpent. The fishing nets are hardly ever worked, but that one or more are among the contents. The other six species are of rare occurrence at Pinang and Singapore, as will be perceived from the disproportionally small number of each, examined during four years, viz. of *Laticauda scutata :* 3 ; *Hydrus striatus :* 2; *nigrocinctus :* 6 ; *gracilis :* 7 ; *pelamidoides :* 4 ; *pelamis :* 1.—Of these *Laticauda scutata* is excessively numerous in Timor, *Hydrus pelamis* in New Guinea, the Molucca Islands, and Otaheite, where the natives use it as an article of food. The remaining species, as far as is known, have been observed nowhere in such overwhelming numbers. Large individuals of every species are very seldom seen, it is the young individuals which frequent the coasts, and it appears to be questionable, if even the largest observed are animals arrived at their full size. The large individuals are very ferocious ; the young ones are less so. Fortunately for the fishermen the light blinds these serpents, which when out of their proper element, become very sluggish and soon expire. This accounts for the safety of the class of men, whose daily calling brings

them in immediate contact with animals, the wound of which is fatal. The fishermen in the straits of Malacca are aware of their danger, and therefore take care to avoid or destroy these reptiles while landing the fishes. The Malays denominate them "*Ular laut*," i. e. serpents of the sea, among which, however, the innocuous *Acrochordus granulatus*, (Schneider) is also comprised as an inhabitant of the coasts.

BATRACHIA.

FAM. CÆCILIDÆ, Bonaparte.

Gen. Ichthyophis, *Fitzinger*, 1826.
(*Epicrium*, Wagler, 1828.)

Head depressed, elongated; muzzle obtuse; maxillary and palatine teeth slender, pointed and couched backwards; tongue entire with velvety surface; eyes distinct, below and a little in front of which a fosset with a minutely tentaculated border; body subfusiform with numerous close circular folds.

Ichthyophis glutinosus (Linné) Var?

Of a uniform sooty brown, paler on the lower surface. Circular folds 254, of which 8 are caudal.

Habit.—*Singapore.*

The transversal diameter, taken at the occiput, is nearly equal to that of the root of the tail, and but little less than the uniform diameter of the trunk, which is between the 24th and 25th part of the entire length. Compared with a specimen of *Ichthyophis glutinosus*, (Linné,) the present is of a more robust make; the head is shorter, the muzzle blunter, and the transversal distance between the nostrils greater. The apex of the tongue and the arches formed by the teeth are broader, more rounded. The palatal and upper maxillary teeth are blunter, and appear less recurved. Those of the lower jaw, the largest, present an appearance as if each was composed of two distinct parts: a lower which is vertical, broadly triangular, the posterior margin of which supports the upper part, which is curved backwards, and with rounded apex. The circular folds of the skin are fewer, more distant, and with the exception of the 3 or 4 anterior ones, complete. They are dis-

posed in a manner similar to that of *Ichthyophis glutinosus*. The crowded imbricate scales appear to be of a somewhat rectangular form, less rounded than in *I. glutinosus :* in both their surface presents a minute net-work. The fosset of the upper lip is situated in the centre of a small tubercle. The circumference of the fosset is provided with a very short, minute, membranous tube, which, however, after the animal for some years has been preserved in spirits of wine, can scarcely any longer be distinguished.

Length of the head, ...	$0\frac{3}{8}$ inch.
Ditto ditto trunk, ...	$10\frac{1}{8}$
Ditto ditto tail, ...	$0\frac{2}{8}$
Entire length,..	$10\frac{6}{8}$ inch.

Circumference of the neck, 1, of the trunk, $1\frac{2}{8}$, of the root of the tail, $\frac{5}{8}$ inch.

A single individual was observed by Dr. Montgomerie at Singapore in 1843, in whose garden it was turned up with the earth, from about two feet below the surface, and from whom I received the specimen, shortly after it had been killed. Although, as stated, it differs in colours and in other characters from the description given by M. M. Duméril and Bibron of *Ichthyophis glutinosus (Epicrium glutinosum*, Wagler, apud D. and B.) as well as from a specimen $10\frac{2}{8}$ inch in length, from Assam, the data appear to me insufficient with certainty to determine, whether the present is a distinct species, or a variety of *Ichthyophis glutinosus*, (Linné.)

FAM. RANIDÆ, Bonaparte.

Gen. Rana, *Linné.*

Skin smooth, hinder extremities very long, formed for leaping ; toes palmated ; teeth in the upper jaw, and in the palate.

Rana leschenaulti, Dum. and Bibr.

A line of minute conical tubercles along the sides of the body and across the throat. Above uniformly chocolate-coloured ; beneath and on the innerside of the extremities white, more or less vermiculated with pale brown. Iris narrow golden, rhomboidal, the two lower sides not joining each other, but leaving a small open space between them. Web of the toes orange with purple spots.

Habit.—*Malayan Peninsula.*

Pondicherry, Bengal.

The marbled appearance of the upper parts, described by M. M. Duméril and Bibron, does not exist during life, but is acquired when the frog is immersed in alcohol. The species is apparently not numerous. Of two the larger was of the following dimensions :

Length of the head, ...	$0\frac{7}{8}$ inch.
Ditto ditto trunk, ...	$1\frac{6}{8}$
Ditto ditto anterior extremity, ...	$1\frac{4}{8}$
Ditto ditto posterior, ...	$3\frac{6}{8}$

Rana bengalensis, Gray, *Illustr. Ind. Zool.* is perhaps intended to represent this species.

Rana tigrina, Daudin.

Syn.—Rana tigrina, Daudin. Hist. nat. Gren. &c. p. 64, Pl. 20.
Rana mugiens, Daudin. l. c. Pl. 23.
Rana mugiens, Latreille. Hist. Rept. F. 2, p. 153, Fig. 2.
La grenouille taureau, Cuvier, R. A., 1. Ed.
Rana tigrina, Merrem.
Rana limnocharis, Boie, MS.
Rana cancrivora, Boie, MS.
Rana cancrivora, Gravenhorst.
Rana picta, Gravenhorst.
Rana brama, Lesson.
Rana rugulosa, Wiegmann.
Rana vittigera, Wiegmann.
Rana cancrivora, Tschudi.
Rana tigrina, apud Duméril and Bibron.
"Kodók, Kátak, Lancha" of the Malays.

Body and limbs above golden greyish-olive or brown, in some with large rounded black spots, and with a yellow line from the muzzle down the back, and a similar broad band from the side of the muzzle to the loins. Beneath and on the innerside of the limbs white or yellow, with or without black spots. Iris burnished golden, the lower half sometimes black, pupil elliptical rhombic.

Habit.—*Malayan Peninsula and Islands.*

Coromandel, Bengal, Assam, Tenasserim, Java, Sumatra, Timor, Philippines, Canton Province.

The species is excessively numerous in valleys and hills, after heavy falls of rain, but adult individuals are of comparatively rare occurrence

At night the deep short baying sound denotes its presence. The largest individual measured :

Length of the head, ...	$1\frac{4}{8}$ inch.
Ditto ditto trunk, ...	$3\frac{4}{8}$
Ditto ditto anterior extremities, ...	$2\frac{4}{8}$
Ditto ditto posterior, ...	$7\frac{4}{8}$

GEN. MEGALOPHRYS, *Kuhl.*

Head very large, broader than the trunk, depressed ; rostral angle and upper eyelid elongated to a point. Tympanic membrane hidden. Nostrils lateral, below the rostral angle. Mouth enormous ; tongue circular, slightly notched behind. Posterior extremity with a short interdigital membrane.

MEGALOPHRYS MONTANA, Wagler, VAR.

Above pale greyish brown, with a small black triangular tubercle on each shoulder, and a similar in the centre of the sacrum. From the sides of the muzzle a black band edged with white, continued round the orbit, and then downwards, obliquely over the dark brown cheeks. Outside of the limbs indistinctly marked with black. On the elbows, knees and heels a large round black spot. Posterior margin of the limbs rose-coloured. Fingers and toes yellowish white with transverse black bands. Palms and soles black. Throat and chest sooty with a large white blotch on each side of the latter. Abdomen and innerside of the limbs sooty, vermiculated and spotted with white. Iris rich golden brown, with minute black net-work. Pupil vertically rhomboidal.

HABIT.—*Pinang.*

Wagler's short description of *M. montana* is drawn up from a preserved specimen, which apparently is also the case with that communicated in *Erpétologie Générale*. From the latter the present animal differs both in colours and in the following particulars. The muzzle forms a pointed lobe resembling the upper eyelids, but smaller. The nostrils are transversely oval, protected by a membranous valve fixed to their lower margin. The upper eyelids are perfectly smooth. The nearly vertical cheeks are above bordered by an angular ridge terminating near the shoulder; behind by a short curved ridge, which at the angle of the mouth forms a small pointed lobe. The back is smooth without transversal folds, but bordered on each side by a sharp whitish ridge commencing at the upper eyelid, converging towards the

cloacal orifice. On the shoulder, near the triangular tubercle, the ridge is enclosed between two short black lines.

Two males were at different times captured on the Pentland Hills, at an elevation of about 1800 ft. One was found in a dark room, where it was observed remaining motionless during several successive days. Its forms and colours caused it at first to be mistaken for a withered leaf. The second was taken on a tree. The iris is vertically contracted by exposure to the light. The male has no vocal sacs. The larger was of the following dimensions:

Length of the head, ...	$0\frac{7}{8}$ inch.
Ditto ditto trunk, ...	$1\frac{7}{8}$
Ditto ditto anterior extremities, ...	2
Ditto ditto posterior, ...	$3\frac{2}{3}$

FAM. HYLIDÆ.

Gen. Limnodytes,* *Duméril and Bibron.*

Tongue long, narrowed in front, widened, forked, free behind; teeth on the vomer forming two groups, between the internal openings of the nostrils; tympanum distinct; Eustachian tubes middling; four fingers free; toes completely or partially webbed; sub-digital disks slightly dilated; process of the first os cuneiforme blunt, very minute; males with vocal sacs; sacral transversal processes not dilated.

Limnodytes erythræus, (Schlegel).

Syn.—Hyla erythræa, Schlegel.
Hylarana erythræa Tschudi.
Limnodytes erythræus, Duméril and Bibron.

Back and sides brown or reddish-olive; a longitudinal silvery white band from the eye to the loin; a second similar from the nostrils, parallel with the former. Beneath silvery white. The innerside of the extremities spotted and lineated with brown. Iris golden brown; pupil vertically rhomboidal.

Habit.—*Malayan Peninsula.*
Java, Arracan.

Of three individuals observed, the largest was of the following dimensions:

* This denomination has with propriety been substituted for the inadmissible *Hyla-Rana*, Tschudi.

Length of the head, ...	$0\frac{7}{8}$ inch.
Ditto ditto trunk, ...	$1\frac{6}{8}$
Ditto ditto anterior extremities, ...	$1\frac{6}{8}$
Ditto ditto posterior,.....	$4\frac{2}{8}$

GEN. POLYPEDATES, *Tschudi, apud Duméril and Bibron.*

Terminal joints of the fingers and toes widened into a large disk ; fingers slightly webbed at their base ; Eustachian tubes large ; in other particulars resembling *Limnodytes*.

POLYPEDATES LEUCOMYSTAX, (Gravenhorst.)

SYN.—Hyla maculata, Gray, Illust. Ind. Zool.
Hyla leucomystax, Gravenhorst.
Polypedates leucomystax, Tschudi, apud Dum. and Bibr.

Upper parts changeable: buff, ashy grey, chocolate brown, tinged with rose-or lilac, minutely or largely spotted with black. Upper lips white. A blackish band occupying the sides of the head, from the muzzle to tympanum. Beneath whitish or grey, uniformly, or minutely dotted with black. Posterior surface of the thighs blackish or vermiculated with white. Iris silvery or buff; pupil horizontally rhomboidal.

HABIT.—*Pinang, Singapore, Malayan Peninsula.*
Malabar and Coromandel Coast, Bengal.

This species has the power of changing its colours as above described. Although it inhabits Singapore and the sultry plains of Bengal, it appears not to occur in the valleys at Pinang, but to affect the hills, at an elevation of more than 2000 ft., with a mean annual temperature of about 71°

Length of the head, ...	$0\frac{6}{8}$ inch.
Ditto ditto trunk, ...	$1\frac{6}{8}$
Ditto ditto anterior extremities, ...	$1\frac{6}{8}$
Ditto ditto posterior,.....	$4\frac{4}{8}$

FAM. BUFONIDÆ, FITZINGER.

GEN. BUFO, *Laurenti.*

Body inflated ; skin warty ; parotids porous ; toes united by a rudimentary membrane ; no teeth.

BUFO MELANOSTICTUS, Schneider.

SYN.—Bufo scaber, Daudin.
Bufo bengalensis, Daudin.

Bufo scaber, Latreille.
Bufo scaber, Daudin, Hist. Rept.
Bufo bengalensis, Daudin, Hist. Rept.
Le Crapaud de Bengale, Lesson.
Bufo dubia, Shaw, apud Gray, Illustr. Ind. Zool.
Bufo carinatus, Gray, Illustr. Ind. Zool.
Bufo melanostictus, apud Gravenhorst.
Bufo scaber, Tschudi.
"Kákong," "Kátak púru," of the Malays of the Peninsula.

Above earthy brown, grey or buff, in some marbled with black; lips, parotids, crests of the head, points of the tubercles, and last joints of fingers and toes: sooty, or black. Beneath buff, in some vermiculated with black. Iris golden brown; pupil transversely rhombic.

Habit.—*Malayan Peninsula and Islands.*

Java, Tenasserim, Bengal, Coromandel.

In the Malayan countries this species swarms in valleys and hills. It has in a slight degree the power of changing its colours, and it utters a chirping, plaintive sound. The largest individuals examined, measured—

Length of the head,.....	1 inch.
Ditto ditto trunk,.....	3
Ditto ditto anterior extremities, ...	$2\frac{2}{8}$
Ditto ditto posterior extremities, ...	$4\frac{2}{8}$

Gen. Hylædactylus, *Tschudi.*

Tongue an oval disk, thick, free only at the lateral margins. Palatal teeth. Eustachian tubes very minute. No parotids. Four free fingers with the terminal joint widened, truncated. Five toes united at the base by a very small membrane, the terminal joint not widened; sole with two soft tubercles between tarsus and metatarsus. Sacral transversal processes forming triangular palettes.

Hylædactylus bivittatus, n. s.

Upper parts and outside of extremities brownish olive with distant small black spots. Head from the muzzle to the middle of the orbit whitish. A broad whitish band edged with black from the posterior angle of the eye, along each side to the loins. A shorter, oblique, similar band from the posterior angle of the eye. Beneath whitish, vermiculated with brown. The throat of the males black. Iris golden brown; pupil transversally rhombic.

Habit.—*Malayan Peninsula.*

From *H. baleatus*, Tschudi, the present species differs both in colours and in the following particulars. The profile from the nose to coccyx forms a considerable arch, the highest part of which is the centre of the back. The male is provided with a vocal sac, the large openings of which are situated on each side of the tongue, and their presence is easily detected by the laxity of the (black) skin of the throat, which forms a broad transversal fold. Between the small openings of the Eustachian tubes the palate presents a considerable transversal fold of the skin, the free margin of which is fringed, which gives it the appearance of a row of teeth. A similar fold has been observed by M. M. Duméril and Bibron in the genera *Plectropus*, Dum. and Bibr., and in *Uperodon*, Dum. and Bibr. In front of this fold is another smaller, between the orbital protuberances. Behind each of the large internal openings of the nostrils, is an arched bony ridge, which in *H. baleatus* supports a few teeth. In the only individual of the present species examined, the free margin of the ridge is cutting, but without teeth. Over the symphysis of the lower jaw there is a small pointed process, fitting into a corresponding cavity in the margin of the upper jaw. In this species no less than in *Uperodon marmoratum*, Dum. and Bibr. nearly the whole of the thigh is hidden by the skin of the body, so that the posterior extremities are free but from a little above the knees. This character does not appear to exist in *Hylædactylus baleatus*, as it is not mentioned in the description of that species by M. M. Duméril and Bibron. On the anterior part of the back appear some indistinct rounded elevations ; the rest of the upper parts is smooth. The skin of the throat and abdomen presents numerous transversal wrinkles, and is covered with minute tubercles. The toes are more slender than the fingers, and their last joint, although flattened, is not so broad, as that of the fingers, which is of a somewhat triangular form, truncated in front. In *H. baleatus* the fingers are longer than the toes. In the present species however the longest finger, the third, is nearly one-fourth shorter than the fourth toe.

The only individual which I had an opportunity of examining, after its death, was a male taken in a field near Malacca. It was of the following dimensions :

Length of the head, ... $0\frac{3}{8}$ inch.
Ditto ditto trunk, ... $2\frac{6}{8}$

In a straight line from the muzzle to coccyx, following the arch of the back,..	$3\frac{1}{2}$
Length of the anterior extremities, . ..	$1\frac{6}{8}$
Ditto ditto posterior extremities, following the posterior margin, ...	$2\frac{7}{8}$

In the nomenclature adopted in the preceding Catalogue it has been my wish strictly to adhere to the Rules proposed by the Committee of the British Association for the Advancement of Science, published in the *Report of the twelveth Meeting*, Rules with which I regret I was unacquainted before the publication of the Catalogue of Malayan Mammalia.

I have to acknowledge my sense of obligation to the Hon'ble Sir William Norris, late Recorder of H. M. Court of Judicature in the Straits of Malacca, to W. T. Lewis, Esq. Asst. Res. Councillor, Prince of Wales Island, to W. Montgomerie, Esq., M. D. late Senior Surgeon, Straits of Malacca, and to Capt. Congalton, H. C. Steamer Hooghly for their assistance, to me so much more acceptable, as the limited leisure left me by the superintendence of six Hospitals in Prince of Wales Island, and a seventh in Province Wellesley, was latterly curtailed by additional, extra-professional duties, imposed upon me by the present local head authority in the Straits.

Fort William, June 1st, 1847.

EXPLANATION OF THE PLATES.

Pl. XX. *Dilophyrus grandis*, Gray.—(Natural size).

Pl. XL. Fig. 1. *Calamaria longiceps*, Cantor.—(Magnified.)
Fig. 2. *Lycodon effrænis*, Cantor.—(Magnified).
Fig. 3. *Dipsas bou*, (H. Boie.)—(Natural size).
Fig. 4. *Homalopsis hydrina*, Cantor.—(Natural size).
Fig. 5. *Homalopsis leucobalia*, Schlegel, *Var.*—(Natural size).
Fig. 6. *Elaps melanurus*, (Shaw)—(Natural size).
Fig. 7 *Elaps nigromaculatus*, Cantor.—(Natural size).
Fig. 8. *Hydrus nigrocinctus*, (Daudin.) *Var.?*—(Natural size).
Fig. 9. *Trigonocephalus sumatranus*, (Raffles.) *Var.*—(Natural size).

ADDENDA.

P. 3. To Syn. *Emys crassicollis*, Bell, add: apud Horsfield: Life of Raffles.

P. 8. To *Gymnopus gangeticus*, (Cuv.) add: Syn. *Trionyx ocellatus*, Hardwieke (Young), apud Jaquemont: Atlas: Pl. 9.

P. 16. To Syn. *Crocodilus biporcatus*, Cuv. add: apud Horsfield: l. c.

P. 56. To Syn. *Python des isles de la Sonde*, add: Cuvier, R. A.

LATITUDINAL DISTRIBUTION OF REPTILES

Inhabiting the Malayan Peninsula and Islands and other Localities.

[*Sp.* prefixed to localities signifies that they are inhabited by *species* of which varieties occur in Malayan countries.]

CHELONIA.

1	*Geoemyda spinosa*, Gray.	Pinang.	Sumatra.
2	*Emys crassicollis*, Bell, ms.	Pinang, Malayan Peninsula.	Sumatra, Java.
3	*Emys platynota*, Gray.	Pinang, Malayan Peninsula.	Sumatra.
4	*Emys trivittata*, Dum. & Bibr.	Pinang, Malayan Peninsula.	Bengal, Assam.
5	*Cistudo amboinensis*, (Daud.)	Singapore, Malayan Peninsula.	Java, Amboina, Philippines, Tenasserim Provinces.
6	*Tetraonyx affinis*, Cantor.	Pinang.	
7	*Gymnopus gangeticus*, (Cuv.	Pinang, Malayan Peninsula.	Rivers and Bay of Bengal.
8	*Gymnopus cartilagineus* (Boddaert.)	Pinang, Malayan Peninsula.	Java, Dukhun, "India," "China."
9	*Gymnopus indicus*, (Gray.)	Pinang, Malayan Peninsula.	Rivers of India, Philippines.
10	*Chelonia virgata*, Schweigger.	Malayan Seas.	Teneriffe, Rio Janeiro, Cape of Good Hope, New York, Indian Ocean, Red Sea.
11	*Chelonia imbricata*, (Linné.	Malayan Seas.	Atlantic and Indian Ocean.
12	*Chelonia olivacea*, Eschscholtz.	Malayan Seas.	Bay of Bengal, China Sea.

SAURIA.

1	*Crocodilus vulgaris*, Cuv. Var B, Dum. & Bibr.	Malayan Peninsula & Islands.	Java, Sumatra, Tenasserim, Bengal, Coromandel, Malabar.
2	*Crocodilus porosus*, Schneider.	Pinang, Singapore, Malayan Peninsula.	Seychelle Islands, Timor, Java, Sumatra, Tenasserim, Bengal.
3	*Platydactylus lugubris*, Dum. and Bibr.	Pinang.	Otaheite.
4	*Platydactylus gecko*, (Linné.)	Malayan Peninsula.	Philippines, Java, Tenasserim, Burmah, Bengal, Coromandel.
5	*Platydactylus stentor*, Cantor	Pinang.	

6	*Platydactylus monarchus*, Schlegel.	Pinang, Singapore, Malayan Peninsula.	Philippines, Amboina, Borneo.
7	*Ptychozoon homalocephalum*, (Creveld.)	Pinang, Singapore.	Ramree Island (Arracan).
8	*Hemidactylus peronii*, Dum. and Bibr.	Pinang.	Isle of France.
9	*Hemidactylus coctæi*, Dum. and Bibr.	Pinang.	Bengal, Bombay.
10	*Hemidactylus frenatus*, Schlegel, MS.	Pinang, Singapore, Malayan Peninsula.	Amboina, Timor, Java, Marian Isles, Ceylon, Bengal, Assam, South Africa, Madagascar.
11	*Hemidactylus platyurus*, (Schneider.)	Pinang.	Philippines, Borneo, Java, Bengal, Assam.
12	*Gymnodactylus pulchellus*, (Gray.)	Pinang, Singapore.	
13	*Varanus nebulosus*, Dum. and Bibr.	Pinang.	Java, Siam, Bengal.
14	*Varanus flavescens*, (Gray.)	Pinang.	Bengal, Nipal.
15	*Varanus salvator*, (Laurenti.)	Pinang, Malayan Peninsula.	Philippines, Moluccas, Amboina, Java, Bengal, Assam.
16	*Bronchocela cristatella*, (Kuhl.)	Pinang, Singapore, Malayan Peninsula.	Amboina, Island of Buru, Java, Sumatra.
17	*Lophyrus armatus*, (Gray.)	Pinang. Singapore.	Cochin-China.
18	*Dilophyrus grandis*, (Gray.)	Pinang.	Rangoon.
19	*Draco volans*, (Linné.)	Pinang, Singapore, Malayan Peninsula.	Philippines, Borneo, Java.
20	*Draco maculatus*, (Gray.)	Pinang.	Tenasserim.
21	*Leiolepis belli*, (Gray.)	Pinang, Malayan Peninsula.	Cochin-China.
22	*Eumeces punctatus*, (Linné.) *Var.*	Pinang, Singapore, Malayan Peninsula.	*Sp.* Coromandel, Malabar, Bengal.
23	*Euprepis rufescens*, (Shaw.) *Var. D*, Dum. and Bibr. *Var. E*, Dum. and Bibr. *Var. F*, Dum. and Bibr.	Pinang, Singapore, Malayan Peninsula.	*Sp.* Sandwich Islands, Philippines, Timor, Celebes, Borneo, Java, Coromandel, Bengal.
24	*Euprepis ernestii*, Dum. and Bibr.	Pinang, Malayan Peninsula.	Java.
25	*Lygosoma chalcides*, (Linné.)	Pinang, Singapore.	Java.

OPHIDIA.

Innocuous.

1	*Pilidion lineatum*, (Boie.)	Pinang, Singapore.	Java.
2	*Typhlops nigro-albus*, Dum. and Bibr.	Pinang, Singapore.	Sumatra.
3	*Typhlops braminus*, (Daudin.)	Pinang, Singapore, Malayan Peninsula.	Canton-Province, Philippines, Guam (Marian Isles), Java, Tenasserim, Bengal, Assam, Coromandel, Ceylon, Malabar.
4	*Cylindrophis rufus*, Laurenti.	Singapore.	Java, Tranquebar, Bengal?
5	*Xenopeltis unicolor*, Reinwardt.	Pinang, Singapore, Malayan Peninsula.	Celebes, Java, Sumatra.
6	*Python reticulatus*, (Schneider.)	Malayan Peninsula & Islands.	Chusan? Amboina, Java, Banka, Sumatra, Bengal?
7	*Acrochordus javanicus*, Hornstedt.	Pinang, Singapore.	Java.
8	*Acrochordus granulatus*, (Schneider.)	Rivers and Sea of the Malayan Peninsula and Islands.	Bay of Manilla, New-Guinea, Timor, Java, Sumatra, Coromandel.
9	*Calamaria lumbricoidea*, Schlegel, *Var.*	Pinang, Singapore.	*Sp.* Celebes, Java.
10	*Calamaria linnei*, Boie, *Var.* Schlegel.	Pinang.	Java.
11	*Calamaria longiceps*, Cantor.	Pinang.	
12	*Calamaria sagittaria*, Cantor.	Malayan Peninsula.	Bengal, Assam.
13	*Coronella baliodeira*, Schlegel.	Pinang.	Java.
14	*Xenodon purpurascens*, Schlegel.	Pinang.	Java, Tenasserim. *Var.* Chirra Punji, Assam, Darjeling, Midnapore (Bengal.)
15	*Lycodon aulicus*, (Linné.)	Pinang.	Bengal, Coromandel.
	Var. A,	Pinang.	Bengal.
	Var. B,	Pinang, Malayan Pen.	Java, Tenasserim.
	Var. C,	Pinang, Malayan Pen.	Pulo Samao, Timor.
	Var. D,	Malayan Peninsula.	Bengal.
16	*Lycodon platurinus*, (Shaw.)	Pinang.	Java, Bengal?
17	*Lycodon effrœnis*, Cantor.	Pinang.	
18	*Coluber fasciolatus*, Shaw.	Malayan Peninsula.	Coromandel.

19	*Coluber radiatus*, Schlegel.	Pinang, Singapore, Malayan Peninsula.	Java, Sumatra, Cochin-China, Tenasserim, Assam.
20	*Coluber korros*, Reinwardt.	Pinang, Singapore, Malayan Peninsula.	Java, Sumatra, Arracan, Tenasserim.
21	*Coluber hexagonotus*, Cantor.	Pinang.	
22	*Dipsas dendrophila*, Reinwardt.	Pinang, Singapore, Malayan Peninsula.	Celebes, Java.
23	*Dipsas multimaculata*, Schlegel.	Pinang, Malayan Peninsula.	Celebes, Java, Tenasserim, Bengal.
24	*Dipsas cynodon*, Cuvier.	Pinang, Malayan Peninsula.	Java, Tenasserim.
25	*Dipsas boa*, Boie.	Pinang.	Java.
26	*Herpetodryas oxycephalus*, (Reinwardt.)	Pinang.	Celebes, Java.
27	*Dryinus prasinus*, (Reinwardt.)	Malayan Peninsula & Islands.	Celebes, Java, Cochin-China, Siam, Burmah, Tenasserim, Arracan, Bengal, Assam.
	Var. A,	Same localities.	Same localities.
	Var. B,	Pinang.	
	Var. C,	Pinang.	
28	*Leptophis pictus*, (Gmelin.)	Malayan Peninsula & Islands.	Manilla, New Ireland, Waigiou, Amboina, New-Guinea, Pulo Samao, Java, Sumatra, Cochin-China, Tenasserim, Burmah, Bengal, Assam, Coromandel.
	Var. A,	Malayan Peninsula.	Bengal, Assam, Ceylon.
29	*Leptophis caudalineatus*, Cantor.	Pinang, Singapore.	
30	*Leptophis ornatus*, (Shaw.)		*Sp.* Bengal, Ceylon.
	Var.	Pinang, Malayan Peninsula.	Java, Sumatra, Tenasserim, Arracan.
31	*Tropidonotus umbratus*, (Daudin.)		*Sp.* Bengal, Assam, Coromandel, Ceylon.
	Var.	Malayan Peninsula & Islands.	Java, Bengal.
32	*Tropidonotus stolatus*, (Linné.)	Pinang, Malayan Peninsula.	Philippines, Tenasserim, Bengal, Assam, Nipal, Coromandel, Ceylon, Bombay.
33	*Tropidonotus schistosus*, (Daudin.)	Malayan Peninsula.	Philippines, Tenasserim, Bengal, Madagascar.
	Var.	Same locality.	Same localities.
34	*Tropidonotus cerasogaster*, (Cantor.)	Malayan Peninsula.	Bengal, Assam.

35	*Tropidonotus junceus*, cantor.	Pinang.	
36	*Homalopsis rhinchops*, (Schneider.)	Malayan Peninsula & Islands.	New-Guinea, Amboina, Timor, Sarapua, Java, Sumatra, Tenasserim, Bengal, Coromandel.
37	*Homalopsis buccata*, (Linné.)	Pinang, Malayan Peninsula.	Java.
38	*Homalopsis sieboldi*, Schlegel.	Malayan Peninsula.	Bengal.
39	*Homalopsis enhydris*, (Schneider.)	Malayan Peninsula & Islands.	Java, Tenasserim, Bengal, Coromandel.
40	*Homalopsis plumbea*, Boie.	Pinang.	Java.
41	*Homalopsis leucobalia*, Schlegel, *Var.*	Pinang, Malayan Peninsula.	*Sp.* Timor.
42	*Homalopsis hydrina*, Cantor.	Sea off Pinang and the Malayan Peninsula.	

VENOMOUS.

43	I. *Elaps melanurus*, (Shaw.)	Malayan Peninsula.	Tenasserim, Nerva, (Coromandel.)
44	II. *Elaps intestinalis*, (Laurenti.) *Var.*	Pinang, Singapore, Malayan Peninsula.	*Sp.* Java, Malwah, (Central India.)
45	III. *Elaps nigromaculatus*, Cantor.	Pinang, Singapore.	
46	IV. *Elaps bivirgatus*, Kuhl, *Var.*	Pinang, Malayan Peninsula.	*Sp.* Java, Sumatra.
47	V. *Bungarus flaviceps*, J. Reinhardt.	Pinang.	Java.
48	VI. *Bungarus candidus*, (Linné.)	Malayan Peninsula.	Java, Tenasserim, Bengal, Assam, Coromandel, Ceylon, Malabar.
49	VII. *Bungarus fasciatus*, (Schneider.)	Pinang, Malayan Peninsula.	Java, Tenasserim, Bengal, Coromandel.
50	VIII. *Hamadryas ophiophagus*, Cantor.	Pinang, Singapore, Malayan Peninsula.	Java, Sumatra, Bengal, Assam, Coromandel.
51	IX. *Naja lutescens*, Laurenti.		*Sp.* Countries between the Sutledj and Cape Comorin, Ceylon, Hindoostan to Cape Romania, Sumatra, Java, Ternate, Borneo, Philippines, Chusan.
	Var. D, (Daudin.)	Pinang, Singapore, Malayan Peninsula	Bengal, Coromandel.
	Var. nigra,	Pinang, Singapore.	

52	X. *Trigonocephalus gramineus*, (Shaw.)	Pinang, Singapore, Malayan Peninsula.	New Holland, Timor, Pulo Samao, Celebes, Eastern Java, Banka, Sumatra, Tenasserim, Bengal, Chirra Punji, Nipal, Coromandel, Ceylon.
	Var.	Pinang, Singapore, Malayan Peninsula	Sumatra, Tenasserim.
53	XI. *Trigonocephalus sumatranus*, (Raffles.) *Var.*	Pinang, Singapore Malayan Peninsula	*Sp.* Sumatra.
54	XII. *Trigonocephalus puniceus*, Reinwardt.	Pinang, Singapore Malayan Peninsula	Java.
55	XIII. *Laticauda scutata*, Laurenti.	Sea of the Malayan Peninsula and Islands.	Bay of Bengal, Sea of Timor, Celebes, Molucca, and Liewkiew Islands, New Guinea, Tongataboo, China Sea.
56	XIV. *Hydrus striatus*, (Lacépède.)	Sea of Pinang, Malayan Peninsula.	Sea of Liewkiew Islands, Timor, Sumatra, Bay of Bengal.
57	XV. *Hydrus nigrocinctus*, (Daudin.)	Sea of Pinang, Singapore, Malayan Peninsula.	Bay of Bengal, estuaries of the Ganges.
	Var. ?	Sea off Pinang.	
58	XVI. *Hydrus gracilis.* Shaw.	Sea of Malayan Peninsula and Islands	Bay of Bengal, Malabar, Sumatra, Borneo.
59	XVII. *Hydrus schistosus*, (Daudin.)	Sea of Malayan Peninsula and Islands.	Bay of Bengal, Malabar, Sumatra.
60	XVIII. *Hydrus pelamidoides*, (Schlegel.)	Sea of Malayan Peninsula and Islands	Bay of Bengal, Sea of Celebes, Molucca Islands, China Sea.
61	XIX. *Hydrus bicolor*, (Schneider.)	Sea of Malayan Peninsula.	Bay of Bengal, Sea of Sumatra, Java, Celebes, Moluccas, China Sea (to 27° N. L.) Otaheite, Bay of Port Jackson (33° 55′ S. L. 151° 25′ E. L.)

BATRACHIA.

1	*Ichthyophis glutinosus*, (Linné.) *Var. ?*	Singapore.	*Sp.* Java, Ceylon, Assam.
2	*Rana leschenaulti*, Dum. and Bibr.	Malayan Peninsula.	Bengal, Pondicherry.
3	*Rana tigrina*, Daudin.	Malayan Peninsula and Islands.	Coromandel, Bengal, Assam, Tenasserim, Java, Sumatra, Timor, Philippines, Canton Province.

4	*Megalophrys montana*, Wagler, *Var.*	Pinang.	*Sp.* Java.
5	*Limnodytes erythræus*, (Schlegel.)	Malayan Peninsula.	Java, Tenasserim, Arracan.
6	*Polypedates leucomystax*, (Gravenhorst.)	Pinang, Singapore, Malayan Peninsula.	Bengal, Coromandel, Malabar.
7	*Bufo melanostictus*, Schneider.	Malayan Peninsula and Islands.	Java, Tenasserim, Bengal, Coromandel.
8	*Hylædactylus bivittatus*, Cantor.	Malayan Peninsula.	

ALTITUDINAL DISTRIBUTION OF REPTILES

Inhabiting the Malayan Peninsula and Islands, and other Localities.

[The extra-Malayan localities have necessarily been confined to such of which the elevation has been specified by authors, the Malayan are given from personal observation.]

Prince of Wales Island (Pulo Pinang), 5° 25′ N. L. 100° 19′ E. *Valley:* Mean annual temperature: 80° 03 Fahr. Average monthly range of the thermometer: 11°; greatest daily range: 13°. Annual quantity of rain: 65.5 inch. (145 days).

Hills. Granite. Highest elevation *(Western Hill)* 2,500 ft. Mean annual temperature 71°. Average monthly range of the thermometer 10°; greatest daily range 9°. Annual quantity of rain: 116.6 inch (174 days). Vegetation even for a tropical distinguished by luxuriance, beauty and variety. Characteristic features: Filices. (*Alsophila contaminans*, Wal.—*Schizæa dichotoma*,—*Neuroplatyceros (Acrostichum) biforme*, Desvontaine. *Polypodium horsfieldii*, Bennett.)

Pandanaceæ. (*Freycinetia*).

Taccaceæ. (*Tacca cristata*, Jack).

Palmaceæ. (*Areca catechu*, Willd. *Arenya saccharifera*, Labill. *Nipa fruticans. Enoplus tigillaria*, Jack. "*Pinang Lawyer.*"* *Calamus).*

Scitamineæ. (*Hedychium sumatranum*, Jack. *Amomum biflorum*, Jack).

Orchidaceæ.

Taxaceæ. *(Dacrydium. Podocarpus).*

Gnetaceæ. *(Gnetum gnemon. Gnetum brunonianum).*

Artocarpeæ. *(Phytocrene palmata*, Wal. *Phytocrene bracteata*, Wal.)

[This species appears to be confined to the lower parts of the hills and the valleys.]

Nepenthaceæ. (*Nepenthes distillatoria. Nepenthes ampullaria*, Jack).

Gesneraceæ. (*Didymocarpus crinitas*, Jack).

Euphorbiaceæ.

Corylaceæ. (*Quercus racemosa*, Jack. *Lithocarpus javensis*, Blume).

* An undescribed dwarf palm, hitherto supposed to be confined to the hills of Pinang. Sir William Norris found it on Mount Ophir in 1847.

Begoniaceæ. (*Begonia orbiculata*, Jack).
Sterculiaceæ. (*Sterculia coccinea*, Roxburgh. *Durio Zibethinus*, Lin.)
Dipteraceæ. (*Dipterocarpus*).
Aurantiaceæ. (*Murraya paniculata*, Loar).
Anacardiaceæ. (*Stagmaria verniciflua*, Jack).
Connaraceæ. (*Eurycoma longifolia*, Jack).
Garcinicæ.
Melastomaceæ. (*Melastoma bracteata*, Jack. *M. exigua*, Jack. *M. glauca*, *Jack. Sonerila moluccana*, Rob.)
Myrtaceæ.

Singapore Island, 1° 24′ N. L. 104° E. Mean annual temperature, 80°. Greatest daily range of thermometer: 10°. Annual number of rainy days: 185. Surface gently undulating. Sand-stone hills, indicating remote convulsion; highest hill (*Bukit Tímah*) 530 ft, granite. In the valleys occur vegetable and animal forms which at Pinang have been observed at or near the summit of the hills, but not in the plains. Thus at Singapore, occur *Alsophila, Schizæa, Tacca cristata, Gnetum, Nepenthes, Begonia, Eurycoma* and others, which at Pinang appear to affect a much greater elevation. Instances of Reptiles in common to the plains of Singapore and the hills of Pinang are: *Ptychozoon homalocephalum, Gymnodactylus pulchellus, Lygosoma chalcides, Pilidion lineatum, Typhlops nigro-albus, Calamaria lumbricoidea, Var. Leptophis caudalineatus, Elaps intestinalis, Elaps nigromaculatus.*

Malayan Peninsula. Geographically, not politically, from 12° N. L. between 98° and 104° E. computed to about 80,000 square miles, or about 4000 square miles less than Great Britain. Zoological information has hitherto been confined almost exclusively to the plains of the western part. The productions of the chain of mountains dividing the Peninsula, and terminating in Cape Romania in 1° 17′ N. L. (Point Búrus in 1° 15′ N. L.) are almost entirely unknown. The late Mr. Griffith on a visit in the early part of 1842 to mount Ophir (*Gúnong Lédang* in about 2° 30′ N. L. on the eastern boundary of the district of Malacca, granite, and computed about 4000 ft.) made the interesting discovery that from 1500 ft. and upwards the vegetation changes completely, and in many respects assumes a Polynesian or Australian character. Early in 1847 Lieutenant Colonel James Low visited Keddah Peak, (*Gúnong Jerai*,) opposite to the town of Keddah, in about 6° 5′ N. L. which he observes is not granite, but stratified, abounding in minerals. According to observation of the boiling point of water, the summit, a small platform on the edge of the strata, is 5,705½ ft. above the sea. Towards the summit the vegetation becomes very stunted and partakes of Australian character.* Colonel Low further observes that during the ascent he did not see a single animal, but found foot prints of a Rhinoceros, smaller than usual, he supposes, up to the very summit. To a casual visiter of the Malayan hill forest, during the day, the paucity of animals is a striking feature. The noonday light subdued by the dense foliage of the towering stems, gives to the scene a sombre character, heightened by the unseen denizons. Their presence is manifested in the shrill vibrations of Cicadæ, one of which on the Pinang hills is noted for its resemblance to the cavalry trumpet, the call of the Tupai, the dismal tap of the gigantic woodpecker, the creaking flight of a Buceros, or the retreat of frightened Semnopithecs.

* A collection of plants from the summit of the mountain, with which Colonel Low favoured me, were examined by Capt. Munro, H. M. 39th Regiment, the only botanist at present in Calcutta, previously to their being despatched to the Royal Gardens, Kew.

CHELONIA.

Species.	Hills.	Plains.
Geoemyda spinosa, Gray.	Pinang.	
Emys crassicollis, Bell, MS.		Ponds and rivulets Malayan Peninsula, Pinang.
Emys platynota, Gray.		Malayan Peninsula, Pinang.
Emys trivittata, Dum. & Bibr.		Ponds and rivers Malayan Peninsula, Pinang, Bengal.
Cistudo amboinensis, (Daud.)		Ditto ditto.
Tetraonyx affinis, Cantor.		Sea off Pinang.
Gymnopus ganyeticus,(Cuvier.)		Rivers and sea-coast Malayan Peninsula, Bengal.
Gymnopus cartilagineus, (Boddaert.)		Ponds and rivers Malayan Peninsula, Pinang, Java, Dukhun, "India," "China."
Gymnopus indicus, (Gray.)		Rivers, estuaries and sea-coast Malayan Peninsula, Pinang, India, Philippine Islands.
Chelonia virgata, Schw. *Chelonia imbricata*, (Lin.) *Chelonia olivacea*, Eschscholtz.		Sea.

SAURIA.

Crocodilus vulgaris, Cuv. *Var. B*, Dum. & Bibr.		Rivers, estuaries and sea-coast Malayan Peninsula and Islands, Java, Sumatra, Tenasserim, Bengal, Coromandel, Malabar.
Crocodilus porosus, Schneider.		Ditto ditto and Seychelle Islands, Timor.
Platydactylus lugubris, Dum. & Bibr.		Pinang.
Platydactylus yecko, (Linné.)		Malayan Peninsula, Bengal.
Platydactylus stentor, Cantor.	Pinang.	
Platydactylus monarchus, Schlegel.	Pinang.	Pinang, Malayan Peninsula, Singapore.
Ptychozoon homalocephalum, (Creveld.)	Pinang.	Singapore.
Hemidactylus peronii, Dum. & Bibr.		Pinang.
Hemidactylus coctæi, Dum. & Bibr.		Pinang, Bengal.
Hemidactylus frenatus, Schlegel, MS.	Pinang.	Pinang, Singapore, Malayan Peninsula, Bengal.
Hemidactylus platyurus, (Schneider.)		Pinang, Bengal.
Gymnodactylus pulchellus, (Gray.)	Pinang.	Singapore.

Species.	Hills.	Plains.
Varanus nebulosus, Dum. & Bibr.	Pinang.	Bengal.
Varanus flavescens, (Gray.)		Pinang, Bengal.
Varanus salvator (Laurenti.)	Pinang.	Malayan Peninsula, Bengal.
Bronchocela cristatella, (Kuhl)	Pinang, Malayan Peninsula.	Malayan Peninsula, Singapore.
Lophyrus armatus, (Gray.)		Pinang, Singapore.
Dilophyrus grandis, Gray.	Pinang.	
Draco volans, Linné.	Pinang.	Pinang, Malayan Peninsula.
Draco maculatus, (Gray.)	Pinang.	
Leiolepis bellii, (Gray.)		Pinang, Malayan Peninsula.
Eumeces punctatus, (Lin.) *Var.*	Pinang.	Pinang, Malayan Peninsula, Singapore.
Euprepis rufescens, (Shaw.) *Var D*, Dum. & Bibr. *Var E*, Dum. & Bibr. *Var F*, Dum. & Bibr.	Pinang.	Pinang, Malayan Peninsula, Singapore.
Euprepis ernestii, Dum. and Bibr.		Pinang, Malayan Peninsula.
Lygosoma chalcides, (Linné.)	Pinang.	Singapore.

OPHIDIA.

Innocuous.

Pilidion lineatum, (Boie.)	Pinang.	Singapore.
Typhlops nigro-albus, Dum. & Bibr.	Pinang.	Singapore.
Typhlops braminus, (Daudin.)	Pinang, Malayan Peninsula.	Pinang, Singapore, Malayan Peninsula, Bengal. Assam.
Cylindrophis rufus, (Laurenti.)		Singapore, Tranquebar, Bengal.
Xenopeltis unicolor, Reinwardt.	Pinang.	Singapore, Malayan Peninsula.
Python reticulatus, (Schneider.)	Pinang, Malayan Peninsula.	Pinang, Singapore, Malayan Peninsula, Bengal?
Acrochordus javanicus, Hornstedt.	Pinang.	Singapore, Java.
Acrochordus granulatus, (Schneider.)		Rivers and Sea-coast of Malayan Peninsula and Islands, New-Guinea, Timor, Java, Sumatra, Coromandel, Bay of Manilla.
Calamaria lumbricoidea, Schlegel, *Var.*	Pinang.	Singapore.
Calamaria linnei, Boie, *Var*, Schlegel.	Pinang.	Java.
Calamaria longiceps, Cantor.	Pinang.	
Calamaria sagittaria, Cantor.		Malayan Peninsula, Bengal.
Coronella baliodeira, Schlegel.	Pinang.	

Species.	Hills.	Plains.
Xenodon purpurascens, Schlegel.	Pinang.	Java.
Lycodon aulicus, (Linné.)	Pinang.	Pinang, Malayan Peninsula, Bengal.
Var. A,	Pinang.	Pinang, Bengal.
Var. B,	Pinang.	Pinang, Malayan Peninsula.
Var. C,	Pinang, Malayan Peninsula.	Pinang, Malayan Peninsula.
Var. D,		Malayan Peninsula, Bengal.
Lycodon platurinus, (Shaw.)	Pinang.	Bengal?
Lycodon effrænis, Cantor.	Pinang.	
Coluber fasciolatus, Shaw.		Malayan Peninsula, Coromandel.
Coluber radiatus, Schlegel.		Pinang, Singapore, Malayan Peninsula.
Coluber korros, Reinwardt.		Pinang, Singapore, Malayan Peninsula.
Coluber hexagonotus, Cantor.	Pinang.	
Dipsas dendrophila, Reinwardt.	Pinang, Malayan Peninsula.	Pinang, Singapore, Malayan Peninsula, Java.
Dipsas multimaculata, Schlegel.	Pinang.	Malayan Peninsula.
Dipsas cynodon, Cuvier.	Pinang.	Malayan Peninsula.
Dipsas boa, Boie.	Pinang.	Java.
Herpetodryas oxycephalus, (Reinwardt.)	Pinang.	
Dryinus prasinus, (Reinwardt.)	Malayan Peninsula and Islands.	Malayan Peninsula and Islands.
Var. A,	Ditto.	Ditto.
Var. B,	Pinang.	
Var. C,	Pinang.	
Leptophis pictus, (Gmelin.)	Malayan Peninsula and Islands.	Malayan Peninsula and Islands, Bengal.
Var. A,	Ditto.	Ditto.
Leptophis caudalineatus, Cantor.	Pinang.	Singapore.
Leptophis ornatus, (Shaw.) *Var.*	Pinang.	Malayan Peninsula.
Tropidonotus umbratus, (Daud.) *Var.*		Malayan Peninsula and Islands, Java, Bengal.
Tropidonotus stolatus, (Linné.)		Pinang, Malayan Peninsula, Bengal, Nipal, Coromandel, Bombay.
Tropidonotus schistosus, (Dau.) *Var.*		Malayan Peninsula, Bengal. Ditto ditto.
Tropidonotus cerasogaster, (Cantor.)		Malayan Peninsula, Bengal.
Tropidonotus junceus, Cantor.	Pinang.	
Homalopsis.		All the Malayan species inhabit fresh-water, rivers, estuaries or the sea-coast, as noted under each.

VENOMOUS.

SPECIES.	HILLS.	PLAINS.
Elaps melanurus, (Shaw.)		Malayan Peninsula, Tenasserim, Nerva.
Elaps intestinalis, (Laurenti.) *Var.*	Pinang.	Singapore, Malayan Peninsula, *Sp.* Java, Malwah, (Central India.)
Elaps nigromaculatus, Cantor.	Pinang.	Singapore.
Elaps bivirgatus, Kuhl. *Ver.*	Pinang.	Malayan Peninsula.
Bungarus flaviceps, J. Reinwardt.	Pinang.	
Bungarus candidus, (Linné.)		Malayan Peninsula, Bengal, Coromandel, Malabar.
Bungarus fasciatus, (Schneider.)		Pinang, Malayan Peninsula, Bengal, Coromandel.
Hamadryas ophiophagus, Cantor.	Pinang.	Singapore, Malayan Peninsula, Bengal.
Naja lutescens, Laurenti. *Var. D.* (Daud.)	Pinang, Malayan Peninsula.	Pinang, Singapore, Malayan Peninsula, Bengal, Coromandel.
Var. nigra.	Pinang.	Pinang, Singapore.
Trigonocephalus gramineus, (Shaw.)	Pinang, Malayan Peninsula, Chirra Punji.	Pinang, Singapore, Malayan Peninsula, Bengal, Nipal.
Var.	Pinang, Malayan Peninsula.	Pinang, Singapore, Malayan Peninsula.
Trigonocephalus sumatranus, (Raffles.) *Var.*		Pinang, Singapore, Malayan Peninsula. *Sp.* Sumatra.
Trigonocephalus puniceus, Reinwardt.		Pinang, Singapore, Malayan Peninsula.
Laticauda Hydrus.		All species inhabit the sea or estuaries.

BATRACHIA.

Ichthyophis glutinosus, (Linné.) *Var ?*		Singapore.
Rana leschenaulti, Dum. and Bibr.		Malayan Peninsula, Bengal, Pondicherry.
Rana tigrina, Daudin.	Malayan Peninsula & Islands.	Malayan Peninsula and Islands, Bengal.
Megalophrys montana, Wagler, *Var.*	Pinang, *Sp.* Java.	
Limnodytes erythræus, (Schlegel.)		Malayan Peninsula.
Polypedates leucomystax, (Gravenhorst.)	Pinang, Malayan Peninsula.	Singapore, Malayan Peninsula, Bengal.
Bufo melanostictus, Schneider.	Malayan Peninsula and Islands.	Malayan Peninsula and Islands, Bengal.
Hylædactylus bivittatus, Cantor.		Malayan Peninsula.

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